FACTORS INFLUENCING THE READINESS TO ADOPT PERFORMANCE BASED BUDGETING SYSTEM (PBBS) AMONG LIBYAN INSTITUTIONS OF HIGHER LEARNING

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ABSTRACT

Improving the government accounting and budgeting system has recently been at the core of several research works of many developing countries including Libya. Backed by strong commitments by governments as well as the assistance of international agencies such as the International Monetary Fund and the World Bank, efforts have been undertaken to introduce reforms and restructure the government accounting and budgeting systems of these countries in order to enhance the effectiveness of financial performance. This study aims to examine the effects of relative advantage, organizational support, satisfaction with the line-item, barriers, tolerance for ambiguity and training and the readiness to adopt performance based budgeting system (PBBS). In addition, the moderating roles of attitude towards change on the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS in Libyan institutions of higher learning (IHLs). Mixed method was employed comprising questionnaire survey, interviews. The respondents were selected from employees of institutions of higher learning in Libya. Data from questionnaire survey was used to test the research hypotheses. To gain further understanding and insights on the relationship between the variables, semi-structured interviews were conducted with policy makers, decision makers and users. The findings of the questionnaire survey indicate significant positive relationship between the relative advantages, organisational support, and training and the readiness to adopt PBBS. In addition, the findings indicate significant negative relationships between satisfaction with the line-item, and barriers and the readiness to adopt PBBS. It was also found that attitude towards change moderates the relationship between relative advantage and tolerance for ambiguity and readiness to adopt PBBS. This study contributes to the body of knowledge by improving our understanding on the factors influencing the readiness towards change. In order to successfully adopt PBBS, the Libyan government should ensure the necessary support such as infrastructures and human capitals are available and ready to embrace the change towards PBBS. In addition, appropriate trainings have to be provided to the employees to enhance the implementation of PBBS.

ABSTRAK

Membaiki system perakaunan dan belanjawan dan pembaharuan kebelakangan ini telah menjadi teras beberapa kerja-kerja penyelidikan dikebanyakan negara membangun termasuk Libya. Disokong oleh komitmen yang kuat oleh kerajaan dan juga bantuan dari agensi-agensi antarabangsa seperti Tabung Kewangan Antarabangsa dan Bank Dunia, usaha-usaha telah diambil untuk memperkenalkan pembaharuan dan menyusun semula sistem perakaunan dan belanjawan kerajaan negara-negara ini untuk memastikan prestasi kewangan lebih berkesan.

Kajian ini bertujuan untuk mengkaji kesan kelebihan relatif, sokongan organisasi, kepuasan dengan bajet 'line-item', halangan, toleransi untuk kekaburan dan latihan keatas kesediaan untuk menerima pakai sistem belanjawan berasaskan prestasi (PBBS) dalam institusi pengajian tinggi di Libya. Di samping itu, peranan pemoderat sikap ke arah perubahan kepada hubungan antara kelebihan relatif dan toleransi bagi kekaburan dan kesediaan untuk menerima pakai PBBS. Kaedah campuran yang terdiri daripada soal selidik dan temu bual telah digunakan. Responden dipilih daripada kakitangan institusi pengajian tinggi di Libya. Data daripada kajian soal selidik telah digunakan untuk menguji hipotesis kajian. Untuk memahami lebih lanjut dan untuk mendapatkan gambaran yang lebih jelas mengenai hubungan antara pemboleh ubah, temu bual separa berstruktur telah dijalankan dengan pembuat dasar, pembuat keputusan, dan pengguna. Hasil kajian soal selidik ini menunjukkan hubungan positif yang signifikan antara kelebihan relatif, sokongan organisasi, dan latihan dengan kesediaan untuk menerima pakai PBBS. Di samping itu kajian menunjukkan hubungan negatif yang signifikan antara kepuasan dengan bajet 'line-item',dan halangan dan kesediaan untuk menerima pakai PBBS. Didapati juga bahawa sikap terhadap perubahan memoderat hubungan antara kelebihan relatif dan toleransi bagi kekaburan dengan kesediaan untuk menerima pakai PBBS. Kajian ini menyumbang kepada badan pengetahuan dengan meningkatkan pemahaman kita tentang faktor-faktor yang mempengaruhi kesediaan ke arah perubahan. Untuk memastikan kejayaan perlaksanaan PBBS, kerajaan Libya perlu memastikan sokongan yang diperlukan seperti infrastruktur dan modal insan yang mencukupi dan sedia untuk melaksanakan perubahan kepada PBBS. Di samping itu, latihan yang bersesuaian perlu disediakan untuk meningkatkan pelaksanaan PBBS.

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LIST OF ABBREVIATIONS

The abbreviations used in this study

PBBS	Performance based Budgeting System (PBBS)
LBS	Line-item Budgeting System
LHEM	Liban High Eduction Ministry
LHIL	Libyan Higher Institutions Learning
GSPLAJ	Great Socialist People's Libyan Arab Jamahiriya
LCIAC	Libyan Commercial Industrial and Agricultural Chamber
GPC	General People's Congress
CIPFA	Institute of Public Finance and Accountancy
MBO	Management by Objectives
MAV	Municipal Association of Victoria
GAO	Government Accountability Office
IPC	Institute of Public Control
IMF	International Monterey Found
T.V.A	Agriculture and the Tennessee Valley
OECD	Organization for Economic Co-operation and Development
ABC	Activity Based Costing
PEMS	Policy Expenditure Management System
ERC	Expenditure Review Commette
NILS	National Institute of Labor Studies
EFA	Exploratory Factor Analyses
CFA	Confirmatory Factor Analyses
WB	World Bank
ZBB	Zero Budget Based Budgeting

APPENDICES

CHAPTER ONE

OVERVIEW OF RESEARCH

1.1 Introduction

This chapter presents an overview of this research. It begins by describing the background of the study, followed by its statement of problems, then the research objectives and questions, when that is done it moves on to scope and limitations, and finally the methodology of the research. A summary of the research findings is also discussed, and the organisation of this thesis is also explained in this chapter.

1.2 Background of the Study

Improving the government accounting and budgeting system and its reforms has recently been at the core of several research works of many developing countries. Backed by strong commitments by governments as well as the assistance of international agencies such as the International Monetary Fund and the World Bank, efforts have been undertaken to introduce reforms and restructuring to the government accounting and budgeting systems of these countries in order to make it more effective in achieving its financial performance and management. One such reform or strategy to improve the financial performance and management in many countries, particularly in the Arab region, is the introduction of PBBS.

PBBS as it is commonly known is a system of money management to achieve efficient and effective operations in both private and public management. The management of money has been a significant factor to ensure such financial efficiency and effectiveness among these organisations. Recent developments in new public management has emphasised largely on public budgeting as a factor in regulating and controlling government operations. Result-oriented budgeting systems that connect spending to outcomes have been adopted for many decades ago by countless developed and

developing countries. This trend has been a part of the global public sector reform (Shah, 2007).

There is a broad consensus that the traditional methods in public budgeting such as line-item budgeting systems of analysing and utilising budget figures are inadequate (Premchand and Burkhead, 1984). Traditionally, public annual budgets are prepared basically as forecasts of expenditures for the coming year. Actual results at the end of the spending cycle (i.e. one year) by the company or organisation is compared with the forecasts, and similarly, variances are also calculated and compared (Premchand &Burkhead, 1984). This process only focuses on dollar spending and variances rather than spending outputs. Usually, the next period's forecasts or budgets will depend on its previous year's or period's actual spending, with some increasing and decreasing adjustments, taking into consideration the variance results (Shah, 2007). Traditional budgeting system such as line-item budgeting which emphasises on the process of resource allocation based on expenditure requirements by detailed line items, often does not stress on the expected outcomes or results. Under PBBS, as the name suggests, performance budgeting is about budgeting for performance and it stresses on quantity, quality, timeliness, and minimizing costs in terms of delivery of outputs and outcomes (Xavier, 2001). Thus, it addresses the issue of efficiency and effectiveness of public expenditure.

PBBS is one of the many techniques that is based on the development process of modern budgeting systems (Tugen, et al., 2008). PBBS lays the basis for which the budget will be distributed to accomplish the targeted goals; that is, distributing allocations to projects and activities pertaining to every programme conducted by the government or responsible authorities. As mentioned earlier, performance based budgeting is to prepare government budgets to realise better performance whereby

objectives are set in a clear and measurable way so that expenditure requirements can be computed to achieve them (Xavier, 2001)

On a similar note, Robinson (2002) defined PBBS as a mechanism that uses the information generated from previous performance (reports?) in the current design of public funding so as to link funding with results as well as to improve the effectiveness and efficiency in delivery outcomes or achieving goals.

The more sophisticated approach to budget analysis has been defined in the literature as PBBS (Robinson, 2002). The utilisation of PBBS overcomes typical problems associated with the traditional methods (Shah, 2007). Fundamentally, PBBS seeks to make budgeting systems and institutions alike, play the most important role in improving fund allocation, productivity, effectiveness and efficiency in the public sector. The primary wave of post-World War performance-based budgeting systems sought to substitute incremental budgetary with a system of full central spending system. According to Robinson (2002), the purpose of moving towards performance budgeting was to ensure optimal allocation of resources as conceptualised by welfare economics. Such systems should react to changing needs and priorities (World Bank, 1998). However, the United States' experience with programme budgeting in the 1960s and other similar systems has not been successful, thus making it clear that the objective of allocating resources was very ambitious (Kong, 2005). As scholars of public administration such as Widavsky (1975) asserted, it was simply not possible for essential budgetary decision-makers to collect sufficient information to modify all expenses in order to maximise social benefits.

It is important to note that the lack of reliable information, data, or statistics with regards to budget planning and formulation can pose a serious problem to many governments when choosing a particular type of budgetary system. In view of that

institutional deficiency, the move towards the readiness of adopting PBBS may not be that easy and entails careful and detailed study. It is imperative that the move towards the performance and budgeting system must be undertaken in a holistic and integrated way involving all levels of governments and stakeholders. The next section discusses problems and issues with regards to financial reforms in Libya.

1.3 Problem Statement

Public sector reform, in general, aims at achieving efficient and effective use of public money. The last two decades have witnessed considerable works in the development of government or public budgeting systems. This trend in reforms has begun in developed countries, such as, the UK, Australia, the Netherlands, Canada, Sweden, New Zealand, Finland and the USA (Hassan, 2010). The trend was also widespread in developing and less developed countries, like Malaysia, Egypt, Botswana, Kenya, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania and Uganda (Ouda, 2003; Irish Republic Development Corporation Report, 2004).

The reform in government accounting and budgeting system initiated over the last two decades has also motivated scholarly academic research on this topic. A number of studies has been undertaken to introduce budgeting reforms to improve financial performance and incorporate innovations in financial management both in developing and developed countries (Dugdale &Lyne, 2013; Robinson, 2007; Shah, 2007, Medfield, 2011). The Diffusion-Contingency Model for Government Accounting Diffusions, which was developed by Godfrey et al. (2001), as well as other models have discussed the issue of reform and the adoption of government and accounting systems theoretically. However, empirical tests of these models are still lacking (Ouda, 2010). Hence, this is a research attempt at filling in this vacuum in the literature.

Moreover, there are limited empirical studies on the recent reforms of the public sector accounting and budgeting models including performance-based budgeting systems,

especially in the context of Libya. Reforms in the way Libya implements its budgeting system is vital to improve its national financial management and will definitely enhance its financial performance particularly in the long-term.

There are limited empirical tests on the recent reforms of the public sector's accounting and budgeting models, including performance-based budgeting system, especially in the Libyan context. Reforms in the way Libya implements its budgeting system will definitely enhance its financial performance.

Furthermore, although the Libyan economic and financial reform was initiated over two decades ago following the collapse of the Eastern Bloc, the critical reform process has started only recently. The reform began when Libya declared in December 2003 that it was abandoning its weapons of mass destruction (WMD) programmes, and the consequent improvement in political relations with the West, especially the USA. There has been much public debate concerning the issue of reform in a country traditionally and stably run by the state. According to the German Marshall Fund of the United States (GMF, 2010), currently the issue of reform in Libya has been under constant debate by those proponents of the speedy adoption of market economy mechanisms and policies and those who support smoother and slower transformation. The issue is also debated among those who argued for maintaining the status quo of the current government accounting management systems.

Government budget and spending in Libya represents a substantial part of the total economic activities in the country. According to the International Monetary Fund (IMF) (2009) and the Libyan Economic Management Reform Manual (2009), the government budget represents around 55.9% of the country's Gross Domestic Product (GDP), which is considered one of the highest in the Northern African region. Table 1-1shows the Libya Economic Indicators from 2005 to 2009 that reflect clearly the structure of Libyan GDP, its growth, and government spending share of the total GDP.

It can be seen inTable 1-1 that the government spending follows an upward trend increasing from 31% to 55.9 % between 2006 and2009. This is not in tandem with the growth rate of GDP which declined from 3.8% in 2008 to 2.1 % in 2009. In addition, it also shows the expenditures increased to 55.9% in 2006. The Decrease in GDP and the increase in government spending, if not managed appropriately, may bring financial issues or problems to the Libyan Government in the coming years. Even though the decline in the growth rate of GDP between 2008 and 2009 did not really affect the government revenue during that period, but the increasing trend of government spending is a great concern to the Libyan Government.

Table 1-1: Libyan Economic Indicators from 2005 to 2009

Indicators	2005	2006	2007	2008	2009
Real GDP growth rate	9.9	5.9	6	3.8	2.1
Nominal GDP in billions of dollars	$44	$56,48	$71,81	$93,17	$95,88
CPI inflation (average)	2.9	1.4	6.3	10.4	5
Revenue (In per cent of GDP)	62.9	62.4	60.8	64.0	66.5
Expenditure and net lending (% GDP)	33.5	31.0	35.3	39.3	55.9

Sources: Libyan Central Bank (2009) International Monetary Report (2010)

In light of increasing government spending, it is critical to examine the effectiveness and efficiency of the government budgeting system including the introduction of PBBS in the institutions of higher learning in Libya. An analysis into factors that may influence the readiness of these institutions of higher learning in adopting PBBS is considered timely in the context of Libya. The effectiveness and efficiency of government and accounting reform systems, including introduction of PBBS in many institutions of higher learning in Libya, has yet to be evaluated and examined.

Factors influencing the adoption and readiness to adopt Performance-Based Budgeting System in the institutions of higher learning in Libya have yet to be identified and measured.

Currently, there are eleven (11) public universities and four higher learning institutions in Libya. The Libyan public universities are attempting to build their own strength and

competitiveness and are positioning themselves to becoming centres of excellence. These universities and higher learning institutions are under the purview of the Ministry of Higher Education. Al- Badri (2007) in his study concluded that these universities' budget allocation and spending using the line-item system of budgeting is hindering the efficiency of these universities in meeting their university objectives.

The problems related to the inefficient and ineffective utilization of public fund, which are linked to the current practice of using line-item budgeting system in the Libyan public sector especially in the institutions of higher learning, have not been addressed by the Libyan government. According to Control Monitoring Authority (CMA, 2004), the line item budgeting system has proved to be less efficient in utilising state or public resources. Furthermore, findings of recent academic studies have pointed out the problems associated with the line-item budgeting System in the country. For example, Al-Badri (2007) noted that leaving the budgeting system in Libya unreformed will lead to a less efficient use of resources in the economy and will lower the country's competitive advantage and impede the current development process.

Kluvers (1999) noted that the adoption of PBBS plays an important role in providing people with some level of control over policy decisions. He explained that there is a relationship between the adoption of PBBS and the arrangement of a council, that is, either it being one of a metropolitan or otherwise (Kluvers, 1999). In addition, Schick (1973) indicated that the adoption of PBBS is to be considered because it gave greater transparency to programme costs and impacts. PBBS assists in planning, by emphasising on the objectives and goal achievement as well as focusing on the implications of budgetary decisions (Kluvers, 1999). Al Badri (2007) elaborated that PBBS is a method that helps managers make decisions by evaluating the difference in cost implications of alternatives, and presenting information that facilitates decision making based on the best outcomes given the resource allocation or utilization.

The development in the government budgeting and accounting systems, as well as the reform process that have taken place in Libya under the new public management initiatives, necessitates a need to conduct an academic work to measure the perception of users and senior executives in Libyan institutions of higher learning towards the implementation of PBBS. This study can be considered to be the first attempt to empirically test the diffusion-contingency model developed by Godfrey (2001) in the Middle Eastern Region using Libyan data.

The Diffusion-Contingency Model suggests that a complex interplay of factors such as the role of political, administrative, and social actors as well as the characteristics of the innovation itself influence the adoption of innovation such as PBBS (Godfrey et al., 2001, p. 281). However based on the literature review, it is found that there are other factors influencing adoption and readiness of PBBS by many government agencies across the world. Roger (1985) who developed the theory of diffusion of innovation, for instance, found that the perceived characteristics or properties of the innovation affect the adoption of the innovation in many public organizations. On the other hand Tritschler (1980), while using the case of accounting innovation noted that innovation is a function of the attributes of the innovation such as compatibility, simplicity, divisibility, and communicability relative to the social system into which it was introduced.

Another contingency theory developed by Thomson (1967) centres around the importance of organizational structure in delimiting responsibilities, control over resources, authority to make decision on communication relationships, and other matters, thereby providing organizations with boundaries. Within which efficiency may be expected to achieve. It argues that for innovation to be adopted the friction that exists between structural and environmental elements of the organization must be reduced and this will help to improve the organizational performance.

Institutional theory on the other hand focuses on the role of institutions which consists of organizational structures, programmes, and practices which make rational decision of acquiring new technology rather than solely relying on technical demands (Meyer &Rowan, 1992). To understand why some decision are made, this theory suggests the need to understand rules, procedures, practices and structure of the institution because these elements shape action within the organization.(Alvarez, 1999; Strang &Meyer, 1993).

However as noted in the literature review, there are other factors that may have an influence on the readiness to adopt PBBS in Libya. These other factors may include (i) relative advantage, (Rogers, 1995) (ii) organisational support, (Campion et al, 1993) and (Scott and Bruce, 1994). (iii) Satisfaction (Rogers, 1993) of an alternative system including line-item budgeting system, (iv) barriers, (Godfrey et al 2001) (v) tolerance for ambiguity, (Furnham and Ribchester, 1995) (vi) training of new skills, (Rothwell et al., 2012) and (vii) attitude towards change (Godfrey et al. 2001). These factors form the thrust of this study.

1.4 Research Objectives and Questions

Against the backdrop of the above discussion, the main goal of the research is to examine the relationships between the factors affecting the readiness to adopt PBBS, such as the relative advantage of organisational support, satisfaction with the current line-item system, barriers, tolerance for ambiguity, existence of skill training as well as attitudes towards change in Libyan higher learning institutions. In summary, the research objectives are as follows:

(a) To examine the extent to which various contingent factors are influencing the readiness to adopt PBBS among the selected higher learning institutions in Libya.

(b) To examine whether attitude towards change moderates the relationship between relative advantage, tolerance for ambiguity and readiness to adopt PPBS.

Consistent with the above research objectives, the following research questions were developed:

1) Does relative advantage directly influence the readiness to adoption of Performance based Budgeting system (PBBS)?

2) Does Organizational support directly influence directly influence readiness of adoption of Performance based Budgeting system (PBBS)?

3) Does satisfaction with line-item directly influence the readiness of adoption of Performance based Budgeting system (PBBS)?

4) Does barriers change directly influence the readiness of adoption of Performance based Budgeting system (PBBS)?

5) Does tolerance for ambiguity directly influence the readiness of adoption of Performance based Budgeting system (PBBS)?

6) Does training affect the readiness of adoption of Performance based Budgeting system (PBBS)?

7) Does attitude towards change moderate the relationship between relative advantage and readiness of adoption of Performance based Budgeting system (PBBS)?

8) Does the attitude towards change moderates the relationship between tolerance for ambiguity and readiness of adoption of Performance based Budgeting system (PBBS)?

1.5 Significance and Justification of the Research

This study advances the identification and assessment of the influence of specific factors concerning the readiness to adopt PBBS among Libyan institutes of higher learning. Specifically, this research examines the extent to which factors such as attitude towards change, relative advantage of technology, tolerance for ambiguity, and government support, contribute towards readiness to adopt PBBS among the selected higher learning institutions in Libya. Significantly, the proposed study is an empirical

contribution to the literature concerning factors or variables influencing acceptance of government and financial system reforms in Libya.

This research makes several useful contributions to scholarly literature. First, it strategically sets the scene of Middle Eastern region's experiences of government and financial systems reform within the global context specifically in the context of Libya. In particular, it conceptually utilises several organisational support theories including the diffusion of innovation model and the diffusion contingency model of government accounting practices which provide a useful theoretical synthesis (Nabli, 2003).

This research also contributes to the enhancement of understanding and appreciation of the readiness to adopt PBBS innovations that have been inadequately studied compared to the adoption of other types of innovations (Kimberly and Evanisko, 1981; Damanpour, 1987; Ravichandran, 2000). The research adds to the current literature by investigating various influential factors in formulating the research hypotheses, using variables such as organisational support, barriers to entry, satisfaction with the existing line-item budgeting system, and training sessions with the levels of readiness of adopt PBBS. Other inputs such as tolerance for ambiguity and attitude towards change and their joint influence on innovation adoption are considered in this research, and contribute towards an analysis of multiple determinants which is needed in the adoption literature.

A number of studies have examined new public management and financial management reforms in North America, Europe, U.K., Scandinavia, Australia, and New Zealand (Brignal & Modell 2000; Hood 1995; Jackson & Lapsley 2003; Mimba, Helden & Tillema 2007). Nevertheless, an insufficient amount studies have concentrated on accounting reform in line with New Public Management in developing countries (Atreya & Armstrong 2002; Marwata & Alam 2006; Oliorilanto 2008; Saleh & Pendlebury 2006).

From the viewpoint of managerial practices, this research also makes several other useful contributions. First, the findings of the research will facilitate the smooth and speedy adoption of PBBS in Libya by allowing administrators in Libyan higher learning institutions to assess the readiness of their institutions in adopting such innovations, and thereby anticipate the problems and prospective success that might occur in such adoption efforts. Secondly, a better understanding concerning innovation adoption will help the administrators of the institutions of higher learning to enhance the survival prospects of their organisations by better aligning their budgeting strategies with the most important organisational factors. Changing to a new budgeting system might prove to be filled with great challenges; hence the research findings may provide guidance to devise appropriate strategies to overcome these challenges.

The reason for adoption of PBBS is due to the role it plays in providing people with some level of control over policy decisions (Kluvers, 1999). There is a relationship between the adoption of PBBS and the arrangement of a council, i.e. either it being one of a metropolitan or otherwise (Kluvers, 1999). In addition, Schick (1973) indicated that the adoption of PBBS is to be considered because it gives a greater transparency to programme costs and impacts. PBBS assists in planning, by emphasising on the objectives and goals achieved as well as focusing on the implications of budgetary decisions (Kluvers, 1999). Moreover, Al-Badri (2007) elaborated that PBBS is a method that helps managers make decisions by evaluating the difference in cost implications of alternatives and presenting information that facilitates decision making based on the best outcomes it resulted in within the current resource utilisation.

1.6 Scope of the Study

The setting of the study is in the Libyan institutions of higher learning (public universities and higher learning institutions). These institutions were selected as the setting for the research because they possess the relevant characteristics of typical

public agencies in Libya such as being the recipient of central government funding and servicing the general public they associate with, and having familiarity of various budgeting systems. Ideally, Libya is selected because the country has reformed its economic management programmes with International Monetary Fund (IMF) support. Hence, Libya has tried to develop a more appropriate accounting system, especially after the United Nation sanctions were lifted. Among Arab countries, Libya was chosen as a representative because it has not been covered in the PBBS literature to date. Similarly, higher learning institutions were selected because the government allocates substantial funding to the institutions of higher learning that requires a good financial management system. One of the financial management systems is budgeting. Currently these institutions of higher learning adopt line item budgeting system, which has been argued to be inadequate in ensuring budget performance. Furthermore, undertaking research in Libya would enhance knowledge of specific and unique understanding of the social, political, historical and economic circumstances, which will add value to data collection methods, data analysis methods and policy or decision making implications.

1.7 The Main Findings and Methodology

A mixed method approaches design (combining survey and semi-structured interview methods) was used to provide a rounded viewpoint on the phenomena being studied. For each region, a survey was firstly planned to validate the framework empirically, and also to refine the protocols required by the subsequent detailed study. Qualitative study analysis was used to confirm the findings and add richness to the understanding of influences of some factors such as relative advantage, management support, barriers, stratification with line item, tolerance for ambiguity and attitude towards change on the readiness of PBBS adoption.

In total, eight hypotheses are to be tested in this study. The first six hypotheses test the direct influence of the perceived factors that influence the willingness to adopt PBBS in

Libyan higher learning institutions. The seventh and the eighth hypotheses test the moderating effects of the attitude towards change concerning the relationship between the relative advantage and tolerance of ambiguity and the readiness to adopt PBBS. The study proposes that: (i) Relative advantage is positively associated with the readiness to adopt PBBS in Libyan higher learning institutions, (ii) Organizational support is positively associated with the readiness to adopt PBBS in Libyan higher learning Institutions, (iii) Satisfaction with line-item budgeting system is negatively associated with the readiness of adopt PBBS in Libyan higher education institutions, (iv) Barriers is negatively associated with the readiness of adopt PBBS in Libyan higher learning institutions, (v) Tolerance for ambiguity is positively associated with the readiness of adopt PBBS in Libyan higher learning institutions, (vi) Training is positively associated with the readiness of adopt PBBS in Libyan higher learning institutions, (vii) Attitude towards change moderates the relationship between relative advantage and the readiness of adopt PBBS, and, finally, (viii) Attitude towards change moderates the relationship between tolerance for ambiguity and readiness of adopt PBBS.

Using a survey study and utilizing the non-probability judgmental sampling techniques is a form of convenience sampling in collecting the data. Total of 432 questionnaires were received and analysed from users in accounting and finance departments in junior, senior and decision making positions in the Libyan higher learning institutions. Also interviews were conducted with decision makers, decision makers' policy and some users. The results of the study show the following: Firstly, Relative advantage influences the readiness to adopt PBBS. This result is consistent with the adoption Diffusion of Innovation Model (Rogers, 1996) and the Diffusion Contingency Model of government accounting. The result is also consistent with prior studies. Secondly, organizational support affects the readiness to adopt PBBS. This finding consistent with the organizational theory and the significance of the organizational characteristics

argued by Godfrey et al. (2001). Thirdly, satisfaction with line-item is positively associated with the adoption of PBBS. On another note it was discovered that, barriers are negatively associated with the readiness of adopt PBBS. This is consistent with the Diffusion Contingency Model of government accounting diffusion (Godfrey et al., (2001) and is strongly consistent with prior empirical studies concerning the adoption of new technology. Moving on, higher Tolerance for ambiguity was found to be associated with accepting system change represented by the readiness to adopt PBBS. This result is highly consistent with prior studies on psychology and organizational behaviour in the organizational theory. Finally, the range of attitude towards change moderates the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS.

1.8 Organisation of the Thesis

This chapter has briefly outlined the research problem upon which the thesis is formulated. The remainder of the thesis is organised as follows: chapter 2 provides the synthesis of major contemporary literature on the topics and theories of public budgeting system. The chapter also discusses in detail the conceptual framework, prior studies in the relevant areas in both developed and developing countries. Chapter 3 further discusses the recent theories of change and diffusion of government accounting and budgeting systems. Specifically, the third chapter reviews the diffusion innovation theory (Rogers, 1995) and the Contingency Diffusion Model of government accounting system (Godfrey et al., 2001).

Chapter 4 describes the research methodology, hypotheses development, outline of research design and sample selection. Descriptive statistics and inferential analysis of the empirical findings as well as the discussion of the results are presented in Chapter 5. Following that, in Chapter 6 the outlined summary of the main findings upon which

conclusions and recommendations of the study are drawn. Figure 1-1outlines the structure of the thesis.

The next chapter provides the background and related literature of public budgeting systems in developed and developing countries including the budgeting systems currently applied in Libya.

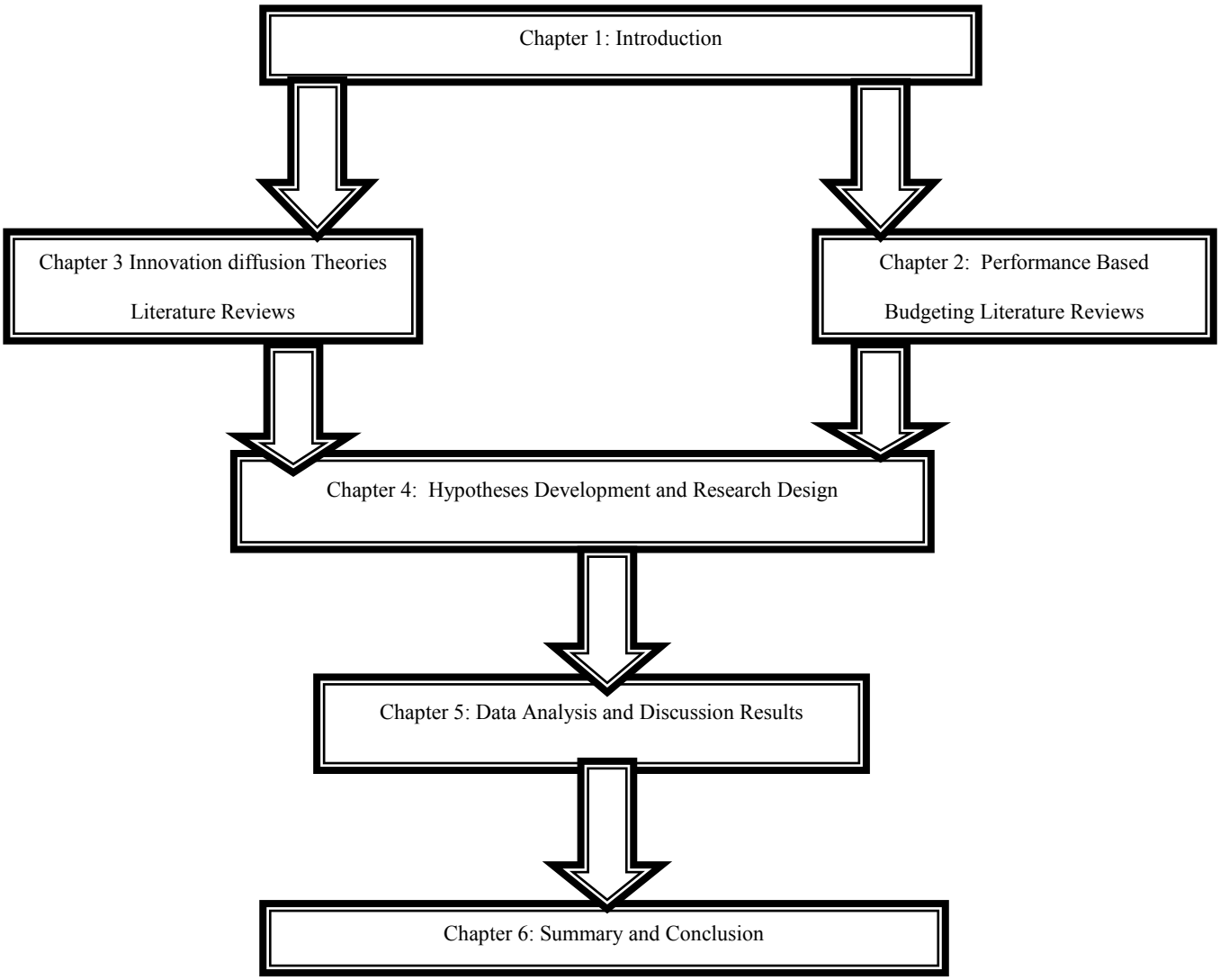

Figure 1-1: Structure of the thesis

CHAPTER TWO

LITERATURE REVIEW ON PERFORMANCE BASED BUDGETING

2.1 Introduction

This chapter reviews the relevant literature on public budgeting. The chapter serves two objectives. Firstly, it presents key concepts of public budgeting. This includes the definition of public budgeting, its importance and the types of public budgeting systems being used nowadays. Secondly, the chapter reviews a number of public budgeting implementation studies that have been undertaken in both the developed as well as the developing countries. Section 2.2 of this chapter looks at the definition and the importance of public budgeting. Meanwhile, section 2.3 discusses the prevailing public budgeting systems, specifically line-item and performance-based budgeting systems. Section 2.4 presents a number of prior studies that looked at the readiness to adopt and the implementation of public budgeting systems in the public sector. Section 2.5 deals with the background of Libya and discusses the public budgeting system that is currently being applied in Libya. Finally, section 2.6 summarizes and concludes this chapter.

2.2 Definition of Public Budgeting

A review of the existing literature on public budgets shows numerous definitions of budgeting. Nevertheless, in terms of their substance, these definitions remain similar. There is a broad consensus in the literatures to define budgeting from a functional perspective. Scholars such as Al-Badri (2007) and Kluvers (1999) look at budgeting as a tool to quantify plan of action. For instance, Al-Badri (2007) defines budgeting as a quantitative look of a plan of action that assists in the coordination and implementation of the plan. Meanwhile, Kluvers (1999) defines budgeting as a method of measuring and converting plans for the use of real, that is, physical funds, into financial values.

Along the same line, Sokhari (1981) also sees budgeting as an attempt to quantify a plan. He defines budgeting as a comprehensive plan for a defined period(s) that lists dollar amount estimations for the expenses of services, activities and projects, and sources necessary to meet these expenses.

Scholars also view budgeting as a tool for financial planning and management. Henley and Perrin (1989), for instance, comment that budgeting provides a link between management planning and management control. Sokhari (1981) suggests that budgeting can be defined as a financial planning for a specific period of time in order to achieve predetermined objectives. In the government sector, public budgeting involves financial planning, usually for a period of one year, aimed at achieving the economic and social objectives, Al-Badri (2007)

Lyneh (1985) describes public budgeting as a detailed account of government revenue and expenditure for the next year. However, Lyneh (1985) goes on further to explain that public budgeting is also a tool for planning, accountability, and control of the government policy for the next year. Novick (1973) meanwhile, defines budgeting as a reflection of government policies by presenting a statement of the goods and services needed for the government and its agencies to carry out these policies in the next period. At the same time, Widavsky (1975) sees public budgeting as a method of disbursing financial resources through political processes to serve a variety of public needs.Budgeting as a statement appreciation detailed Certified contains a general revenues that are expected to be collected by the state, and public expenditures that need to be spent during the fiscal year to come. Budgeting serves as the program's financial plan for the fiscal year to come, in order to achieve specific objectives within the framework of the planned general economic and social development of states.

2.2.1 The Importance of Public Budgeting

A public budget reflects a government's priorities in providing services and goods to the public that is guided by the overall policy of the state. Prior literature in public budgeting has stressed the importance of budgeting to public sector organizations. According to Gildenhuys (1997), the importance of public budgeting can be summarized into compilation and documentation, and the control and revision of government projects.

The importance of public budgeting also lies in its ability to act as a compliance and accountability tool. Rubin (2005) argues that, although the ultimate goal of public budgeting is to provide services and goods to the citizens, it also acts as a powerful tool for holding the government accountable to its constituents. The government spending plan should reflect the constituents' choices and priorities. Thus, through public budgeting, the citizens should be able to check whether the government's spending plans complies with their choices and priorities. Al-Badri (2007) defines budgeting as a quantitative look of a plan of action that assists in the coordination and implementation of development programs.

In essence, budgeting assists a government in determining its objectives, strategies, and policy priorities; and to set out the various programmes and activities to be conducted, as well as the anticipated results that would contribute to achieving its objectives and allocate its limited resources – financial, human and asset – across competing needs in line with the strategies set and expected performance (Xavier, 2001). In other words, as explained by Xavier (2001) "a public budget embodies the socio-economic goals of the nation… next to political manifestos and laws, budgets are the most operational expression of national priorities".

Hence, performance based budgeting is all about budgeting for performance. It sets out objectives, priorities and goals of the nation and allocates its scarce resources across the

competing needs. Drafted in a participatory way, it allows organisations to have ownership of the commitments made in the budget in terms of resource use and results targeted.

2.2.2 Types of Public Budgeting System

There are three main budget types found in the public sector, with each having a different emphasis. The types include line-item budgeting, performance-based budgeting, and zero-based budgeting. The following discussions look at the two most common types of public budgeting, which are the line-budgeting and the performance-based budgeting. The zero-based budgeting is excluded from the following discussion due to the fact that the purpose of this study is strictly to examine the issues related to the readiness of adopting PBBS in the Libyan higher learning institutions as it is different and superior to line-item budgeting system that is currently being used in Libya.

2.2.2.1 Line-item Budgeting System

Line-item budgeting system refers to a list of all planned cash expenses and revenues. As mentioned earlier, Gildenhuys (1997) sees budgeting partly as a documentation of how public money is going to be spent. Therefore, a line-item budget is a financial document that lists how much will be spent on every item included in the budget. To put it plainly, the line-item budget is a financial plan of spending on specific items and how this spending will be financed throughout the plan period. Line-item budgeting is a simple and broadly used budgeting system that is primarily concerned with the control of aggregate government spending limits (Al-Badri, 2007; Kluvers, 1999).However, line-item budgeting system does not inform how well the money was spent and what results have been achieved from this spending.

a) Advantages of Line-item Budgeting System

The use of line-item budgeting system in the public sector is often associated with several benefits. These include:

i. Achieving financial control in terms of expenditure and revenues through the implementation of a systematic legal procession spending and collecting revenues;

ii. Maintaining traditional financing processes helps government units to obtain the needed funds much easier if compared to other budgeting systems;

iii. Line-item budgeting helps to control the limits of government aggregate spending;

iv. Line-item budgeting is less complex to be prepared, and much easier to be used, thus making it easy to apply and ensure uniformity across different entities; and

v. Line-item budgeting is control-oriented and thus makes it an effective and practical policy implementation tool. (Al-Badri, 2007).

b) Disadvantages of Line-Item Budgeting System

Despite its advantages, the application of line-item budgeting system is not without its weaknesses. Some of its shortcomings are:

i. Line-item budgeting focuses solely on controlling the documentation aspect of fund disbursement rather than the output or the result of the expenses;

ii. The information provided by line-item budgeting is not sufficient for the purpose of planning and decision making;

iii. Line-item budgeting focuses on inputs while ignoring outputs and the relationship between them, thus making it impossible to identify the efficient use of economic resources;

iv. Line-item budgeting is unable to monitor and evaluate the performance of specific governmental programmes and activities in view of the distribution of resources devoted to those programmes;

v. The basis for preparing line-item budget estimates and appropriations is in accordance with the concept of assessing the value of expenses regardless of output, which fails to provide users with accomplishment measures that connect programmes to goals achieved;

vi. The basis of line-item budget estimates is usually unclear and cannot be used as a control tool to reflect the accomplishment of programmes;

vii. Line-item budgeting does not take into consideration the relationship between programmes which seek to achieve a particular goal, leading to difficulty in the coordination between the programmes themselves; and

viii. The estimates covered by the budget appropriations is a means to encourage spending regardless of the need to spend, since the appropriation for the next year depends on the actual spending of this year, (Al-Badri, 2007).

As noted by Al-Badri (2007), line item budgeting is simple and is broadly used in many countries, but with this method of budgeting one cannot know how well the money is being spent and which fiscal targets have been achieved.

2.2.2.2 Performance-based Budgeting System (PBBS)

PBBS can be seen as a shift from line-item budgeting system that focuses on input, to a budgeting system that emphasizes on performance, output and outcome (Helmuth, 2010; Schedler, 2003). It aims to improve the efficiency and effectiveness of public spending by connecting the funding of public sector organizations to the results they achieve, by making use of systematic performance information (Al-Badri, 2007).

PBBS originated from the need for efficiency in spending and concerns for management improvement. It is distinctly different from line-item budgeting in the sense that PBBS looks into planning the target and defusing the programme, which will assist in administrating it efficiently. It also requires that budgeting to be structured based on activities rather than spending regardless of the outcome.

PBBS may carry different names depending on the country using it. Throughout literature, various other names for PBBS can be found; one such name is "devolved budgeting"(Scott, 2001),"lump-sum budgeting"(Rubin, 2006),"entrepreneurial budgeting"(Cothran,1993) and "performance informed budgeting"(Joyce, 2003).Nevertheless, public budgeting scholars and experts generally agree that PBBS, in the public sector, is the allocation of public funds to implement a goal and an objective that needs to be matched with a measurement of efficiency and effectiveness (Epstin, 1984; Garsombke & Schrad, 1999; Snell &Hayes, 1993). According to Mikesell (1999), PBBS is fundamentally aimed at linking inputs to an objective and showing to what extent the outcome reflects the efficiency in the performance. Meanwhile, Griesemer (1983) defines PBBS as "an approach that is focused on linking the input, whether monetary or otherwise, with the outcome of the process".

Melkers and Willoughby (2000) stated that PBBS is the utilization of strategic planning techniques in reference to agency missions, goals and objectives, while simultaneously requesting quantifiable data for establishing meaning to programme outputs and outcomes. As the focus of PPBS is on the performance and outcomes of spending, it can be concluded that PBBS is concerned more with what the government does rather than what it buys (Tyler and Willand, 1997).

2.2.2.2.1 Advantages of Performance-based Budgeting System

Advantages of PBBS can be manifold. Sokhari (1981), for instance, describes that among the advantages of PBBS, is it helps agencies to improve the accountability of organizations by informing the observant citizens about the performance and public benefits of programmes. It also helps restructure unsuccessful programmes or eliminating unnecessary programmes through the assessment of their performance, increase flexibility in using resources to be more efficient and effective, improve coordination and eliminating duplicative programmes, and provides better and right information to decision makers.

Besides Sokhari (1981), other public budgeting scholars have also observed that over the last two decades of budgeting reforms, PBBS adoption has led to better communication between budget actors, improvement of public management in terms of efficiency and effectiveness, it also helps make informed budgetary decision-making easier, and helps to achieve higher accountability and transparency.

PBBS has emerged to be an important public budgeting system. According to California's Legislative Analyst (2009), PBBS is important to governments for a number of reasons:

i. Providing accountability and transparency in the public sector;
ii. Becoming the driving-force for efforts to redesign programmes by focusing on programmes improvements;
iii. Helps in rationalizing budget allocations by using performance information as a basis of evidence;
iv. Improving the understanding of crosscutting programmes in government;
v. Helping agencies connect their daily activities to overall government outcomes and similar activities of other agencies;

vi. Providing cost effectiveness comparison between programmes;

vii. Helps in aligning government spending with its goals;

viii. Providing information for decision makers to help them in making strategic decisions.

Enhanced Communication between Budget Actors & Citizens

One of the significant thrusts of the current budget reform effort is to develop budget presentations that improve communication between the government and the citizens. Since PBBS clarifies programme goals and objectives, and identifies performance targets, it gives agencies and employees a better sense of anticipation for their performance. At the same time, it also helps managers to communicate more effectively their activities to the executives, legislative members, and the public. In contrast to traditional line-item budgeting, performance-based budgeting includes descriptions of each of the government programmes, performance measures, and budget information. These are then made accessible to ordinary citizens and therefore facilitates public managers to disseminate information about their programmes to the public, and to obtain public understanding and support for their activities (Shah and Chen, 2007).

Enhanced Management in Government Agencies

Due to its nature that emphasises performance and outcomes, PBBS can help programme managers to identify organizational goals/achievement, check programme performance, have better knowledge about problems with programme structure and operation, plan for the future, improve internal control, and link programmes with results. Wang (2000) analyses survey responses from 205 US local governments and found that 70.6 present of the respondents consented that the adoption of PBBS has increased their ability to determine service efficiency. Meanwhile, 65.1 present of the respondents believed that PBBS adoption has increased their ability to determine service effectiveness. In terms of accountability, 65.4 present of the respondents agreed

that PBBS adoption has improved accountability of program performance. In Australia, a study conducted by the National Eleventh Institute of Labour Studies in the year 2001, showed that 93 present of agencies believed that an agency's performance orientation in PBBS had contributed to improved individual and organizational performance (Scheers et al., 2005).

More Informed Budgetary Decision-Making

At present, PBBS initiatives are less successful in terms of changing appropriation levels (Blondal & Curristine, 2004; Kristensen et.al, 2002; Rivenbark & Kelly, 2003; Wang, 2000). Although PBBS could not rationalize and change the political budgeting process, it surely adds value to discussions, as performance information is taken into account when the level of funding is decided. With suitable information, politicians are able to call for improvements and better understand the issues involved. According to Shah and Chen (2007), PBBS and its performance information may play an active role in resource allocation in the following instances:

i. Gives good reason for reallocation of resources given performance information;
ii. Changes the focus of discussion from line items to broader objectives and performance of agencies and programmes;
iii. Impacts decisions about proposed new programmes and on funding increases or decreases to programmes;
iv. Provides benchmarks which are useful to legislators in decision making.

Higher Transparency and Accountability

The PBBS budget document is able to serve as a major instrument of transparency and accountability to the legislative body and the public. In contrast, a line-item budget which is classically budgeted according to line item inputs has been unsuccessful in delivering meaningful information regarding how well the government is doing. On the other hand, PBBS classifies resources by programmes and also presents performance

indicators. This makes it much easier for the public to get a sense of major government activities and their achievements. The government performance is under public scrutiny thanks to annual or semi-annual performance reports.

Accountability in the public sector has traditionally been based on compliance with regulations and procedures. Basically, it does not matter what you do as long as you observe the regulations. However, PBBS introduces result-based accountability, holding managers accountable for what they achieve and not how they do it (Shah and Chen, 2007) .PBBS introduces accountability on allocated resources. Its monitoring assumes that the organization has a clearly defined strategic plan with measurable objectives linked to its strategic priorities. It assumes that targets are to be met within the specified timeframe. This, in return, will motivate managers to enter into performance agreements to ensure that the strategic objectives of the entity are achieved, otherwise they will be held liable and responsible for the non-achievement of the objectives (Griesemer, 1983) As mentioned earlier, the readiness to adopt PBBS means government expenditure must be classified by programmes, input, output, and outcome measures. Thus, PBBS is able to serve as a monitoring tool against set standards or projects. Resources for a programme are affected by its performance outcome and government agencies which obtain incentives or disincentives based on their performance results.

The success of PBBS is contingent upon the capability of the spending entity to clearly define the measuring tools and the areas to be monitored. An entity that does not have the capacity to monitor their performance may not fully realize the benefits of PBBS. Additionally, Wang (1999) comments that presently many governments do not have any performance reporting and management exercise. Therefore, it will take quite some time before any performance budgeting exercise is existent in these governments.

2.2.2.3 Zero Based Budgeting (ZBB)

"During the 1970s and 1980s zero budgeting (ZBB) processes were introduced in some countries, partly as a result of the difficulties posed by program budgeting and partly as a solution to the ' incrementalism' of line budgeting. ZBB was initially developed for, and applied in, large corporations such as Texas Instruments, Playboy, and Xerox in the USA" (Barkman 1997, p. 63). ZBB was first introduced in the public sector as a budget reform tool by the Carter administration and later abandoned by the Reagan Government. However, zero based budgeting still has currency with a small number of governments (Kluvers 1999; Barkman 1997). The term 'zero based' came from the requirement that all programs were considered to have no funding at the beginning of each budget cycle. Zero based budgeting represented a major shift away from the idea of incremental resource allocation changes to evaluating the performance of the entire range of government activities. The process required all departments to identify their programs, and to rank and justify the existence of each program in the order of importance to departmental goals and objectives. Higher ranked programs were more likely to continue to be funded. ZBB was a bottom up process, which required each manger to be responsible for the process of ranking and justifying the value and continued existence of programs. But this is a difficult and complex process, particularly so, for agencies with diverse goals. It requires a great deal of time and effort on the part of agency staff. Consequently, zero based budgeting has not emerged as a widely adopted form of performance oriented budgeting.

2.3 Key Conditions for Successful Implementation of Performance –based Budgeting System

There are certain key factors affecting and influencing the successful implementation of PBBS in government organizations. The basic condition required to continue the drive of performance budgeting reform as summarized as follows:

2.3.1 Incentive to Make a Change

One of the keys to successful implementation of PBBS is the presence of the interest, and the will to make a change. According to Wang (1999), the use of PBBS and performance measurement must be justified by public officials. The justification can either be externally motivated, such as the demand for service excellence and accountability, or internally, such as the demand for effectiveness and efficiency. It is also necessary to identify the provider and the user of information, as well as to provide a suitable encouragement strategy for the use of performance-based information. In addition, performance-based information is more helpful for management improvement than for budgetary matters.

Political will is also critical to results-based accountability. The existence of political will may cause a less sophisticated system to achieve a great deal, while its absence may render even a more complex system to achieve very little. In the case of the Libyan higher learning institutions, there must be a higher motivation to adopt and implement the PBBS if it is proven to be successful.

2.3.2 Strong Legislative Support

Strong and stable political support from the legislature is important for successful PBBS initiatives. Often, the absence of legislative support is seen as the fundamental reason for the failure of budget reforms (Melkers &Willoughby, 1998). Legislators might resist performance measurement due to the fear of shifting power to the executive branch (Carroll, 1995; Jones &McCaffery, 1997).Individual service agencies could also obtain budgeting, personnel, and purchasing power delegated from the legislature and central management offices. The political influence of performance-based budgeting reform indicates that the implementation of PBBS requires the support of political stakeholders in order for it to be successful (Wang, 2000).

In addition to the legislative support, support from other external administrations is also needed. Enforcing PBBS implementation without political and legislative capacities may not be feasible. The reform of performance ought to offer direct benefits to government stakeholders in place of their support (Wang, 2000). Politicians and reform advocates should allow for a smooth transformation of change by allowing agencies to accustom themselves and build their capabilities for the new system. Given the political will of the Libyan leadership to achieve budget reform, it is anticipated that the support from the top management of the Libyan higher learning institutions will be crucial in the readiness to adopt PBBS in those institutions.

2.3.3 Engagement and Support from Citizens

Budgeting reform inevitably influences all branches of government. It cannot be either on an independent pathway towards technical modification or analytical sophistication independent of the political environment (Kelly, 2003). Thus, PBBS, especially its reports, must be made available to the public. In the absence of any public involvement, performance budget can be irrelevant to the public interest and mostly become an internal bureaucratic business. Public involvement enhances credibility and ensures effective use of the reported information.

2.3.4 Minimum Administrative Ability and Bottom-up Approach

The history of managerial and budgeting reforms tells us that frequently the fate of a new initiative does not rely on logical concepts, good quality intentions, and sound values, but rather on operational issues which involve how well people solve practical problems and whether they can ask for continued support to maintain the momentum for reform (Shah & Chen, 2007). The reform should respect the institutional differences among agencies and allow them to develop their own approaches that suit their contexts.

Consideration of institutional differences in applying the system is significant for useful reporting.

2.3.5 Training of Staff

Political enforcement and managerial pledge alone will not create any change if civil servants lack the ability to apply and implement performance budgeting. For the most part, the work in implementing and maintaining a PBBS is done by the budget staff of the executive and legislative branches. This staffs have to be given sufficient training and resources to achieve the tasks. Competent staffs are necessary to achieve the desired change in adopting the new system. For instance, only competent staff can track the necessary information while making sure to keep costs under control. Similarly, interpreting the results correctly can only be done under the efficient supervision of competent staff (reference).

It is a hard undertaking to change organizational culture by building performance perception into staff's daily functions. The experience of many different countries such as Norway, Denmark, and the United States of America, is that, training, direction, and the accessibility of technological support is necessary over a period of time (Shah & Chen, 2007). In the Libyan higher learning institutions, financial resources will more likely be available to staff training to apply the new system. This is due to the financial resources of the country as a whole, the resources allocated to these institutions, and the leadership commitment to reform the government accounting and budgeting systems.

A number of researchers remark that while PBBS provides information for managers, some of them do not know how to use and digest this information. Wildavsky (1992), for instance, argues that there are cases where managers do not know how to make use of the information produced by PBBS. Thus, it is crucial for staff, especially managers, to be trained to utilise information provided by PBBS.

2.3.6 Information Technology

Information technology is also a key factor for the successful adoption and implementation of PBBS. This is because PBBS requires a lot of information and data. The system deals with large amounts of data and, therefore, needs a lot of information facilities. Generally, government agencies do not have data systems that can willingly generate the needed performance information (Shah &Chen, 2007). In Libya's higher learning institutions, IT systems are likely to be available if the country decided to go ahead with this budget reform and the readiness to adopt PBBS in the course of the reform.

2.3.7 Accounting System

PBBS implementation requires a quality accounting system (Shah and Chen, 2007). Performance measurement is the activity based on costing for all direct and indirect costs to a programme, which offers a more accurate picture of expenditure to accomplish a specific objective. Correct cost data is vital for analysis, which seeks to determine the return on investment in government programmes. Therefore, the lack of a suitable accounting system could undermine the performance budgeting reforms. However, in the case of Libya, the country applies a common type of accounting system and it is likely that its current recording system will have a problem in coping with the requirement of the new budgeting system.

2.3.8 Financial Cost of the Reform

The availability of adequate fiscal resources for data gathering, primary training and on-going preservation of the system are critical for the implementation of PBBS. An effective PBBS system requires a valid and reliable framework type of database system for processing and reporting information. It is also critical for public managers to be aware of how information is collected, processed, and converted to output through

useful reports. Developing the information system can be costly. Its costs have to do with data collection, processing and reporting. Although the information system can be costly, it is needed in order to apply performance budgeting. Thus, sufficient financial resources must be made available for the development of the system.

2.4 Prior Studies on Performance-based Budgeting System

Over the years, various researches on budgeting have been undertaken. However, many of these studies focussed on budgeting in the United States of America. A considerable amount of studies have been written about how traditional budgeting has failed to support managers in today's highly competitive world. A majority of the problems encountered with budgeting arose from managing the process itself (Henderson, 1997). To address these issues, a number of techniques have been adopted to improve the process and its results so that budgeting could become much more useful and precise.

According to Anders (2001), the current performance budgeting, compared to the past reforms has three different emphases, which are, the measuring of results or outcomes of performance, the decentralizing of control and the cutting of red tape in the budget process, and the transformation in accountability from compliance with rules to responsibility for results. Nevertheless, despite these obvious benefits of the performance budgeting, it is not easy for governments to use programming and performance budgeting because the budget contains a very large number of performance measures and complex processes. Above all, governments may in fact, have difficulty in choosing the appropriate performance measures.

Easterling (1999) and Joyce (1999) also express a similar notion regarding the readiness to adopt PBBS. According to them, performance-based budgeting is complicated, and therefore, it is not easy for governments to adopt it successfully. It needs a balance

between accountability and efficiency, as well as harmony between political and managerial needs (Caiden, 1994; Moynihan &Ingraham, 2003). Prior studies conducted have also reported that governments usually cannot build this new system in a short period of time. For instance, it took almost ten years for the Florida government to start adopting the performance budget system. Additionally, the present phase can only be considered an initial step and a lot of resistance and worry about proceeding to the next phase may happen during this initial step (Grizzle and Pettijohn, 2002; Radin, 2000; Sheffield, 1999). These problems however are natural phenomena in adopting any policy. Therefore, Berry (2000) and Fowlers (1988) proposed that it is imperative that governments bear in mind the importance of patience and persistence for continuous development in the readiness to adopt PBBS.

In the United States of America PBBS is popular at the state level. In addition to its vast popularity at the state level, American cities are also in the process of implementing this budgetary reform process (Rubin, 2005). However, Andrews and Hill (2003) report that states and cities are also experiencing difficulties in the implementation process of PBBS. They summarize these difficulties as the following.

i. Failure of the leadership in understanding what is required for successful PBBS accomplishment.
ii. A lack of trust across the agency for implementing PBBS.
iii. A failure to distinguish the organizational cultural changes necessary to make PBBS implementation successful.
iv. Unclear initiatives by the legislative and decision making agencies for implementation.
v. Lack of resources dedicated towards full PBBS implementation.
vi. No timelines for when full implementation should be achieved.

vii. Attempting to "add-on" elements of PBBS with existing budgetary forms. Such 'incrementalism' impedes the implementation process of PBBS.

viii. A failure by legislative and decision-making of agencies to use performance principles when making budgetary allocations.

ix. Implementation roles were not clearly defined in the budgetary process.

Botner (1985) states that in the USA, most of the States claimed that performance measurement has been utilized as far back as two decades; such performance-based budgeting systems, then and now, were planned to measure results, outcomes and impacts. They generally need strategic planning relating to the objectives and goals of an agency, and following the assessment of outcomes.

Botner (1985) also states that the justification for focusing on performance is that it is supposed to transform the behaviour of budget decision makers. Similarly, Wildavsky (1992, p.65) says that "…any effective change in budget relationships must necessarily alter the outcomes of the budgetary process. Otherwise, why bother?" In the same way, others have mentioned that transforming the budget system does have an influence on the budget process (Grizzle, 1986; Pettijohn &Grizzle, 1997). Botner (1985) remarks that these studies have changed the perceptions surrounding performance budgeting.

2.4.1 PBBS Implementation in the Developed Countries

As far as empirical studies are concerned, most of the budget studies were carried out in the United States and focused on state budgeting.

Poister and McGowan (1984) and Poister and Streib (1989), undertook studies to determine PBBS acceptance. Poister and McGowan (1984) found out that PBBS has become an accepted management tool in US local governments. They pointed out that among many of the cities that they surveyed during the period of 1987-1988, over 77

per cent or 450 municipal managers reported that they were all using PBBS. Meanwhile, in their study, Poister and Streib (1989) showed that the percentage of cities using PBBS had stabilized.

In Carl and Randolph's (1996) study, their main objective was to test the perception of PBBS, line-items budgeting, and zero budgeting. They also conducted a PBBS perception survey but their respondents were officers from institutions of higher education in the United States. A questionnaire was distributed to chief academic officers of the colleges and universities asking them about their perception of PBBS, line-item budgeting, and zero base budgeting. The survey results showed that most respondents preferred to use a combination of the systems, and the line-item system is still one of the major systems at the institutions of higher education in the United States. The study also revealed that the PBBS approach is quite popular among the respondents.

Melkers and Willoughby (1998) investigated the perceptions of budget officials in order to measure the degree of PBBS implementation and its perceived impact. In the study, they examined states in the United States to determine the existence of legislative or management initiative requirements of the PBBS. They found that all but three states have performance-based budgeting requirements, and that most states established these requirements during the last decade. Their study also found that although performance-based budgeting needs were widespread in the states, relatively few states needed adverse actions for non-compliance.

Similarly, Jordan and Hackbart (1999) conducted a survey of state budget officers in an attempt to determine the present status of state PBBS, including the perceived impact on

budget decision making where they established that PBBS is widely used. About 25 present of state budget officials agreed that performance funding had been successful. However, a few states reported that using "performance funding", which they described as performance assessment, affects the portion of funds.

Barton (1999) noted that in Bellevue City, USA, the city had moved from line-item budgeting system to PBBS. This involved the designation of 1,000 measurements for performance, setting one to three year targets, and tracking their own performances. In addition, the International City/County Management Association (ICMA) Centre for Comparative Performance Measurements addressed performance in four main service areas: police, fire, neighbourhood services and support services. They found that PBBS had changed the method of performance and improved the "effectiveness and efficiency" of the services of the departments.

Funches (1999), who was the Chief Financial Officer of nuclear organizations in the United States of America, wrote a report on the result of directions to facilitate the process of connecting budget appropriations to expected results. The report identified several proposals which include the need to change the structure of programmes to reflect the goals structures, to clarify the relationship between the activities of programmes and performance targets, and to explain plans performance uniformly and justify the budget at a meeting.

The OSD (1999) also published report on PBBS and its implementation. The objectives of the report are:

i. To clarify the concept of the budget of programmes and performance and their application requirements;

ii. To identify the importance of applying performance based budget; and

iii. To identify the challenges and problems facing the implementation of programmes and performance budget in addition to identifying the difficulties encountered in the measurement of achievement.

The report suggests that a successful adoption and implementation of programmes and performance budgeting would require:

i. Establishing a relationship between the activities of the programmes and the goals of achievement;

ii. Providing plans for completion with the amendments in the budget;

iii. Providing information that is truthful and using reliable methods for the application of the budget programmes and performance;

iv. Specifying the period of time that the application of the budget of programmes and performance will take; and

v. Predicting in advance problems in creating systems that work to unite achievement and the budget together.

Melkers and Willoughby (2000) found that state budget officials perceived that performance-based budgeting initiatives have not been so successful in changing at suitable levels as in the case of management improvement in state agencies.

In another perception study, Willoughby and Melkers (2000) investigated the perceptions of implementing PBBS. A survey was distributed to executive and legislative budgeters regarding the PBBS established in their states. The results showed that there were differing perceptions across the branches of government, regarding both the extent of PBBS implementation as well as its success. The result also showed that states with a better understanding of PBBS have not necessarily realized greater success

in terms of effectiveness from this budget reform, compared to states with lower understanding PBBS.

Mark (2001) conducted study on the use of information on agencies performance in evaluating budget options. The author, who is a member of the Congressional Budget office, noted that the "…purpose of the report was to help departments disclose information about programming performance as well as help develop methods of decision making and, consequently, make departments more effective and efficient. The Congressional Budget Office makes audit reports and information that could assist in the analysis of various options for spending and proposing new options.

The report found that the use of performance information:

i. Helps the budget in reference to the levels of energy and makes efforts to ensure that the departments use the resources which have been allocated;
ii. Helps to find a link between the departments and the results of their work;
iii. Leads to results which is difficult to use to balance the budget without options that provide some indications about the contributions of efforts to arrive at the results;
iv. Helps in deciding on the appropriate decision; and
v. Helps to increase the incentive messages that work to set goals and measure results linked to the extent that they achieve these goals.

Melkers and Willoughby (2001) set up an objective to examine the possibility of implementing PBBS in the 50 states in the United States of America. They undertook survey among the legislatives in the United States to assess their perception of PBBS. They surveyed a random sample of law-making and executive budgeters from fifty states, asking them for their impressions of PBBS implementation in their states. The

findings indicated that the implementation of PBBS was proceeding slowly and that there were some benefits of bringing to light performance results as well as some implementation problems. The study also revealed that budget officers were satisfied with the role of performance information in the budgeting process.

Grizzle and Pettijohn (2002) develop a System Dynamic model to evaluate the implementation of performance-based budgeting. They evaluated a budget reform that combines insights from budgeting policy implementation and system dynamics. The system dynamics model combines both quantitative and qualitative research techniques to provide a new framework for applied research, using performance-based budgeting as an example. They applied the model to evaluate the implementation of Florida's PBBS. The model simulation identified several short-term actions that would increase the reforms readiness of success, such as providing clear communications, facilitating budget and accounting routines, and reliable performance information. The model also identified critical legislative behaviour that influences executive implementation.

Most recently, a study conducted by Willoughby (2004) also reached similar findings. Together, performance budgeting employees feel that it is not effective at achieving this task, while more than one-fifth of the agency employees expressed a similar attitude.

Yi (2007), for example, examined the perception and the role of state agencies in the process of developing and implementing of Georgia's performance budgeting. A total of 194 questionnaires were distributed to the fiscal/budget offices and agency heads of 97 entities including large agencies. The response rate was 65 present. In addition to the questionnaires, interviews were also conducted with 31 fiscal/budget officers. The interviews were conducted during the period from July 2005 to May 2006. The length of each interview was around 30 minutes. The findings indicated that for agencies to

conduct performance-based budgeting, the focus needs to be on elevating managerial capacity to use performance information, and improving measurement quality. Moreover, it is crucial to recognize that performance budgeting is a collaborative process in which each participant plays a valuable role.

Several PBBS related studies were also conducted in Australia. Most of the studies showed evidence of implementation and support of PBBS by the local governments in the country.

For example, Gurd (1993) conducted study among the local councils in South Australia. Through the study, the author found that 78 present of the councils were using programme budgeting. They also reported that local governments in South Australia supported PBBS, and that it was a good budgeting method for providing information and accountability.

Gurd and Bellamy (1993) went on to examine the introduction and effect of performance based budgeting and performance indicators. Researchers found that 70 present of councils in South Australia were using programme budgeting, the apparent acceptance of PBBS by local Australia or in the USA, for that matter, seems to be linked to the criticism of programme budgeting. Equally, Kluvers (1999) found that Victorian local government management support for the introduction of PBBS was considerable, it can be concluded that in the majority of cases it was the management that recommended the adoption of PBBS. Kluvers showed a highly significant correlation, with a Pearson P value of 0.0024, between government support and the implementation of PBBS. Metropolitan councils tended to use a combination of PBBS and line-item budgeting, and non-metropolitan councils predominantly used line-item budgeting as it was already familiar to them.

Kluvers (1999) studied the incentives for the readiness to adopt PBBS. The study investigated possible reasons for local governments in Victoria electing to use line-item, PBBS, or a combination of both. Questionnaires were distributed to all local governments in Victoria, and 60% of the questionnaires were returned. The findings showed significant factors that lead to the readiness to adopt PBBS, such as complexity of the organization, prior perception of PBBS as an aid to planning, or due to management support for the adoption. As far as line-items are concerned, the main factor for implementing line-items is that users are familiar with this type of budgeting system. Additionally, Kluvers found that 65 local councils were using a combination of PBBS and line-item for their budgeting. The findings by Kluver are consistent with the findings by O'Toole and Marshall (1987) and Poister and Streib (1989). They also noted similar reasons for local governments adopting both budgeting systems.

Kluvers (1999) also states that the perception of any budgeting reform solving problems is an important reason for the adoption of new budgetary methods. Meanwhile, other researchers suggest that the complexity of the municipality itself could be an incentive for the introduction of PBBS. In Victoria, programme budgeting was introduced at the state level in 1984. But by 1990, the Economic and Budget Review Committee (EBRC) only reported a partial implementation of programme budgeting. Likewise, the Municipal Association of Victoria (MAV) also reported that only 52 percent of Victorian municipalities had adopted programme budgeting.

Kluvers (2001) investigated the relationship between the readiness to adopt PBBS and accountability in Australian municipalities. The study was conducted in two stages. The first involved the use of questionnaires that were mailed to every municipality in Victoria. Kluvers received 120 responses, representing a response rate of 60%. The results showed that there were 65 councils that had been using programme budgeting. The second part of the study consisted of a series of semi-structured follow-up

interviews after the questionnaire were returned. The results showed that PBBS does not always enhance accountability in a local government. The argument was that there might be some external factors that influence the enhancement of accountability. Such as control systems or weakness of the auditing system in the local government.

2.4.2 PBBS Implementation in the Developing Countries

Prior research on budgeting has been conducted over the years and many are focused on budgeting in development countries**:**

Abossagr (1981) investigated the use of PBBS in Jordan. The researcher examined the importance of PBBS application in developing countries, and the reclassification of items of the country's budget, and measurement of physical achievements. He suggested that there was a need to rebuild the accounting system that fits the performance budgeting system, and presented a view on how to build an accounting system that fits with Jordan's performance-based budgeting accounting system.

In Saudi Arabia, Bothma (1983) examined the development of the accounting system structure and the accountability of government. He suggested a need for developing the accounting system to help in developing the budgeting system. Moreover, he tried to review motives for developing the government's accounting system, including the circumstances concerning the preparation of the government's accounting system. He recommended that, in general, there must be a link between the government accounting system and the cost accounting system. The study concluded that developing countries should develop their government accounting systems.

Chalabi (1993) studied the development structure of Jordanian budgeting as an approach to improve the performance of government efficiency. The study aimed to evaluate the Jordanian budgeting structure in the public sector and the problems

encountered during the preparation and justification process of the budget. The author found that to develop the Jordanian budgeting, the best method was to develop government ministries in such a way that the Jordanian government can provide the network information where financial and managerial competencies are needed.

In another part of the Middle East, Naim et.al (1999) examined the effects of the Yemeni government's financial system on the effectiveness of the central supervision and control in the country. The researchers found no link between the expenditure estimates in the budget and the actual spending. Moreover, the control provided by line-item budgeting was not comprehensive and could not control performance, leading to inefficient use of resources. The study also found that the line-item budgeting system hinders the control system on performance and fails to provide data information and statistics.

Mustafa (2000) investigated the effects of the budgeting decision-making process on the application of programming performance budgeting. He studied the link between the method of theory and pattern of decision-making for budgeting and the problems associated with the budget and their influence on financial management. He also attempted to evaluate the approaches taken by decision makers to apply PBBS in Jordan. His study found that the programming performance budgeting provided justification for new programmes expenditure in terms of service performance control. PBBS also helped to describe the programme cost and activities of ministries. The use of PBBS also helped develop methods of accounting and the kind of internal accounting that helps in performance programmes. Finally, he found that PBBS provided change of pattern of accounting and auditing control in comparison to traditional systems.

Shawabkah (2000) investigated the appropriateness of the current accounting system of government for the implementation of PBBS in Jordan. He studied the development of budgeting preparation in the Jordanian public sector, aiming to identify the most important bases available in Jordanian accounting systems appropriate for applying PBBS. The author provided suggestions and recommendations on developing government accounting systems with appropriate applications of programming performance budgeting. He found that the current government accounting system in Jordan did not require programming performance budgeting.

In another study conducted in Jordan, AlRabadi (2001) reviewed the application of the programme and budget performance in the Jordanian government's budget system. The objective of the study was to explore the expected results of applying the method of performance-based budgeting on administrative aspects such as rationalising decision-making, improving administration controller, and performance rationalizing expenditure in the public sector. In addition, the study endeavoured to investigate the planning for administrative improvement and centralization as well as the method of decision-making in the Jordanian context of budgeting. AlRabadi then surveyed 120 analytical accounting and financial employees in Jordanian ministries. He found that PBBS was used to fulfil the expectations of administration in terms of patterns of rationalizing decisions, administration controller, administrative performance, and rationalizing expenditure in the public sector as well as administration decentralization. The method of decision-making in Jordan's budgeting after applying PBBS followed a cumulative pattern. The study concluded that there is a relationship between personal variables and the pattern of rationalizing decisions in the Jordanian budget.

Alloamari (2002) examined the difficulties in the preparation and implementation of programmes and budget performance in Jordan. The study showed that there were a number of difficulties facing the preparation of performance-based budgets such as a lack of government administration, lack of information efficiency, cost accounting system, the control of activities and programmes, duplication of work, lack of human capital, lack of measurement of performance, and lack of coordination between ministries. The researcher recommended the need to develop the current cost accounting system, establish a standard cost basis for measurement, reduce the duplication of work in ministries, reduce the duplication between control systems through effective coordination between them, and provide accounting professional competencies in the government sectors.

Tayib and Rosli (2003) conducted a study on Malaysian universities to identify and explain the present practice of Malaysian public universities budgeting systems, and to provide some recommendations to Malaysian public universities for improving their budgeting systems. A total of 237 questionnaires were distributed to eight public universities, 98 were completed and returned, making up a response rate of 41 present. The findings indicated that Malaysian public universities, to some extent, adopted good budgeting characteristics. This indicates that the budgeting systems of the public universities were acceptable and can be used as a control mechanism to strengthen performance measurement systems. However, Malaysian public universities still faced similar problems as indicated by earlier studies by Dean (1986) and Joon (1972) especially concerning the lack of trained staff and the lack of capability in using data.

Dixon (2005) analysed Thailand's attempts to reform its budget process. He was involved in the early stages of the second round of Thai budget reforms and utilized his

own experience as well as reports of subsequent World Bank and AusAID missions as references for the study. However, he indicated that other parallel research validated his findings. The findings from his study indicated that a centralized budget system is incompatible with a PBBS. Moreover, the study highlighted that reform requires political will and is not merely a managerial problem.

Farid (2010) conducted a study on Palestineuniversities. The researcher examined the willingness to adopt PBBS in the universities and discovered that some factors affect performance based budgeting. The factors are management support, attitude toward change support, and training. He used 200 questionnaires to collect the data. He found that there was appositive relationship between management support, attitude toward change support and training and the wiliness to adopt PBBS.

As far as Libya is concerned, there searcher was not able to come across any prior studies related to PBBS in the country. This could very well be the first study on the readiness to adopt PBBS in Libya, and also the first to use quantitative as well as qualitative approach, as will be discussed in the methodology section. The proposed model for the current study employs different theories such as the diffusion theory, management change, management and planning behaviour, and the diffusion-contingency theory in government accounting.

This study tries to fill in the gap in the body of knowledge in the area of PBBS. As discussed earlier, it can be concluded that most prior researches in PBBS has not focused on the budgeting process as a whole. A number of studies on budgeting have been conducted in recent years and many were concentrated on budgeting in the United States, Australia, the Middle East and some developing countries. However, no previous study has examined the factors that may influence the readiness to adopt PBBS.

Therefore, this study is an attempt to fill the research gap and to examine the effects of factors such as organizational support, barriers, relative advantage, training, satisfaction with line-item, tolerance for ambiguity, and attitude towards change concerning the readiness to adopt PBBS in Libya.

2.5 Background of Libya

Libya is a developing Arab state situated in the North-Central part of Africa, bordering the Mediterranean Sea, between Egypt and Tunisia. Islam is the religion of the country and about 97% of Libyans are Sunni Muslim. The country occupies a region of almost 1.8 million square kilometres, with a population of 5.5 million (Central Bank of Libya, 2001). Arabic is the official language, while Italian and English are also used in trade and business. The Libyan social environment is characterized by the extended family, tribe, clan, village and Islamic religion. This social structure is important in understanding the community and peoples' relationships in the country (Agnaia, 1997).

Libya is an independent state born under the patronage of the United Nations, however its community of people already has a long, extended, and ancient history, all the way from 8000 B.C(Aneizi, 1956). Archaeological proof indicated that the early Libyans consisted of 2 main groups. These groups were a tribe of Mediterranean stock, and individuals from Ethiopia and Negro Africa (Copeland, 1967). Rinehart (1979) additionally affirmed that inscriptions found in Egypt dating from the Recent Kingdom (ac. 2700-220 B.C.) are early known recorded testimony of the Berber migration which makes it the earliest written documentation of Libyan history. According to El-Sharif (2005), Libya was subject to waves of military invasions and colonisation by Phoenicians (around 1000 BC), the Greeks (600 BC), the Vandals (431 BC) and the Romans (96 BC).

Copeland (1967) mentioned that the recorded history of Libya started when Phoenician traders founded trading posts along the North Africa shore where the Semitic people

dominated the sea tradeoff the Japanese Mediterranean for over a thousand years. Aneizi (1956) asserted that the east of Libya (Cyrenaica) was first colonized by Greeks around 600 B.C. Greek trades were additionally active along Libya's coast in 650 B.C. (Murabet, 1964). By 500 B.C. the Greektown-states were forming a succession of confederation (Copeland, 1967).This resulted in the establishment of several cities, which are Tokra, Hesperides, and Apollonia (Murabet, 1964). Rome had overwhelmed north-western Libya, which in part had fallen beneath Carthage's administration in 107 B.C. and obtained formal possession of Cyrenaica in 96 B.C. (Buru, 1989). The Roman Empire continued conquering Libya until the Islamic Empire appeared.

Islamic Imperialism has dominated Libya since 7th century A.D until recent days (Abou-El-Haj, 1983). Buru (1989) mentioned that Arabs swept through the Levant and later overran Egypt in AD 635. The Arabs then moved westwards in Libya seven years later when the forces of the Caliph Omer under the command of AmrIbn El-As launched campaign of conquest which reached Tripoli in 645 AD and Fezzan in 663 (Rinehart, 1979; Bearman, 1986 ; Sicker, 1987; Buru, 1989). Libya used to behalf of the Ottoman Empire from the middle of the 16th century until the beginning of the 20th century. Its regime changed when the French, Italian and English entered North Africa and the Middle East, while the Ottoman state started to copy European law-making and customize it to their desires (Abou-El-Haj, 1983).

The Great Socialist People's Libyan Arab Jamahiriya (GSPLAJ) is the official name of Libya. The GSPLAJ was established according to the "Third Universal Theory "of the Green book by the leader of the Alfatth Revolution, Muammar Al Gadhafi. The change from monarchy to the present system began when Libya became the Libyan Arabic Republic on the 1st of September, 1969. Some actions such as nationalizing foreign companies in Libya and establishing public-owned enterprises were done by the new government to reform the economy. This brought an end to the private sector and

foreign companies, as a wide range of publicly owned enterprises were established (Kilani, 1988). A new political, legislative, and administrative system was introduced in 1972. The new system established a socialist state as part of the peoples' revolution. Five years later, in 1977, the country declared the authority of the people or the state of mass or Jamahiriya. Libya is one of the countries that are being developed in a way that seeks to maintain all its resources in order to solve its social and economic problems, and to raise the standard of welfare for its citizens.

2.5.1 Recent Situation in Libya

It is said that the Libyan authorities have not been obeying resolution 1970 (SC, 2011b), and excessive use of violence has been an ongoing problem since. President Obama recently stated that Muammar Qaddafi has lost his legitimacy to lead and he must leave, this perspective has been shared by many of the world leaders and regional and international organisations (Yoo, 2011). In 2011, Qaddafi's forces equipped the military to attack the city of Benghazi when they reach the outskirts of the city on the 18thof March 2011.

The Security Council then adopted a resolution (1973) at its 6498th meeting on 17th March 2011.Itcontainedinstructions such as, a right to ceasefire, and an ending to the attacks against civilians. In the same meeting, the Security Council decided to use all necessary measures and NATO distributed this task. The USA, UK, and France, had been attacking Qaddafi forces from the 19th until the13thof March 2011. On 31stof March 2011, the control of all military action over Libya, under the United Nations Security Council Resolutions (1970, 1973), was taken over by NATO. The aim of this mission was three elements: an arms embargo, a no-fly-zone, and actions to shield civilians from attack or the threat of attack.

No-fly zones were introduced, and there were speedy modifications in Washington's attitude. As a result of this, Qaddafi's forces inflicted their violence on civilians in

Benghazi (Rogers, 2011). The Pentagon, at that time, had been making preparations for action on that occasion (Rogers, 2011). The African Union's proposal for a ceasefire was predictably rejected by the opposition, as it would have kept Colonel Muammar Qaddafi in power (Sinco, 2011). It can be concluded that the fighting was being kept alive by Qaddafi and NATO forces, and at the time nobody could have been aware of when the war could end.

2.5.2 Libya Economy

The Libyan economy has most of the characteristics of developing countries in terms of economic development which is comparatively small size in activities, dependence on oil income, and a lack of skilled labor. It was observed that the Libyan macro economy was in a satisfactory state throughout the 2000s.However,Libya does not have the diversity in economic activities which is required, though it makes an attempt through transformational economic and social plans, as the public sector is the dominant element in all its economic activities(IMF 2006; IMF 2008). This situation can be attributed to the socialist ideology adopted in the Green Book introduced by Al-Gadhafi.

The Libyan economy thrives on the revenue generated from the petroleum sector of the country, petroleum exports account for half of the country’s gross domestic product (GDP), and is lacking in diversification as the economic growth depends on the international oil market. Table 2-1shows some economic indicators of the Libyan economy. The economic growth was stable at around 6% per annum from 2006 to 2008. However, it decreased in 2009 to 3.7%. This decline of real GDP growth rate in 2009 might be due to the US financial crisis. In terms of nominal GDP, it is clear from the figures that the economy has been growing strongly from 2005 to 2009, from $44 billion to $95 billion, respectively. The rate of inflation clearly increased in 2007 and 2008, from 6.3% to 10.4% per annum, respectively.

The perpetual increase in nominal GDP coupled with a sudden jump in inflation from 1.5% in 2006 to 6.4% and 10.4% in the following two years clearly shows that the growth was nominal in nature and not real. This can be seen by looking at the real GDP growth. It is clear that from 2006 to 2008 that the growth rate was between 6% and 6.5% per annum, indicating that the economy was not growing but inflating. Concerning the revenue and spending of government petroleum income, it can be seen that in the first four years the gap was similar, indicating a budget surplus in the economy. However in 2009, it is obvious that the surplus started to shrink because the real GDP growth declined, thereby forcing the government to spend more to stimulate the economy.

Table 2-1: Libyan Economic Indicators from 2005 to 2009

Indicators	**2005**	**2006**	**2007**	**2008**	**2009**
Real GDP growth rate	9.9	5.9	6	6.5	3.7
Nominal GDP in billions of dollars	$44	$56,48	$71,81	$93,17	$95,88
CPI inflation (average)	2.7	1.5	6.3	10.4	2
Revenue (In per cent of GDP)	62.9	62.4	60.8	64.0	66.5
Expenditure and net lending (% GDP)	33.5	31.0	35.3	39.3	55.9

Source: Libyan Central Bank 2009

The Libyan economic environment can be divided into two stages; the first is Libya's circumstances before oil discovery and after independence, while the second stage covers the period when oil had been discovered, which includes development plans, gross domestic product improvement, and increase in the present surplus within the balance of payments. The initial Libyan government had adopted vision of capitalism. The second included the orientation to socialism. Finally, the government (GPC) has come to its beginning point to apply some capitalist visions, like privatization.

2.5.2.1 Pre-oil Discovery

According to the report by the International Bank for Reconstruction and Development in 1960, Libya since its independence and before 1959, has been classified as one of the poorest countries in the globe. Libya has been characterized by its lack of economic resources and low income despite its large size. As a result, the Libyan government was unable to provide many public services. Therefore, freedom of economic activity had been spread out to foreign investment through legislation which led to the entry of foreign oil companies from many different countries to the Libyan land to explore oil on a massive scale. Intense competition among these companies led to the discovery and exploitation of oil, at a speed unprecedented in different oil-manufacturing countries (WB, 1960).

Majority of the Libyan population had been working in agriculture and animal husbandry prior to the oil discovery as Cyrenaica's infrastructure had been damaged throughout the Second World War (Vandewalle, 1998). The World Bank Mission (1960) stated that most Libyans still lead a very simple life and have strong tribal traditions at that time. The property of a family or a Kabila might be considerable, but their living standards generally stay austere. Amenities such as electricity and running water are practically non-existent. Thus, it can be confirmed that Libya has witnessed radical economic changes since its independence until today. The Libyan economy after independence was a very basic economy and depended on agriculture, traditional industries, and fishing. Once oil was discovered in the late fifties, the Libyan economy became advanced in the application of capitalism theory and the enlargement of foreign investment. The monarchy in Libya was dominated by ideas of capitalism and became one underlying reasons for the revolution led by al-Gadhafi.

2.5.2.2 After oil Discovery

Murabet (1964) postulated that Libya was transferring from being the poorest country in the world, to one of the oil exporting countries at the beginning of the 1960s, ever since capitalism had been implemented by Libyan governments, and the country obtained independence until the early years of revolution. The Libyan economic position totally changed after the discovery of oil. As a result, many international corporations begun to find oil and gas, as such foreign capital increased. The economic structure of Libya was mixed between the non-public sector in small enterprises while the public sector managed strategic enterprises to keep up the balance in the economy and some laws have been issued regarding economic activities. However on the 1st of September 1969, the revolution started and Colonel Muammar Al-Gadhafi declared that Libya a free and sovereign republic under the name of the Libyan Arab Republic (Cooley, 1983). During the first few months after the revolution, the Libyan government required the military forces of both the US and Britain to leave Libya immediately while the nationalisation of the Libyan oil business began on 4 July 1970 following the introduction of Revolutionary Law No.69 (Otman &Karlberg, 2007). This law forced all activities related to oil trade to join the Libyan National Oil Corporation (LNOC). Thus, all assets and liabilities of foreign corporations were transferred to the Libyan government. The situation led to the start of bad relations between Libya and western countries, especially the USA.

Colonel Muammar Al-Gadhafi declared Libya's new name as the Socialist People's Libyan Arab Jamahiriya on 2nd March 1977, which coincided with the publishing of the Green Book written by Colonel Al-Gadhafi (Bleuchot, 1982).

In economic terms, the Green Book explained that the solution to the economic drawback lies in the application of a new socialist theory. This theory is predicated on the concept that the goal of economic activity is production, in order to satisfy the

requirements of the members of society. From this direction, it selected another purpose, which is the liberation of needs to be happy. Basically, a solution has been provided for the liberation of those desires to participate in the assembly as a substitute for wage or salary. With regards to participation in production, there was a proposal that it should be divided equally between production elements. Parts of production had been divided into three parts, namely, raw materials, production tools, and staff. Without one of these elements the assembly method cannot be completed.

The implementation of socialism is characterized by the orientation towards the liberalization of the financial system from the dominance of foreign companies. As a result, the exercise of economic activity in most cases has been administrated by the public sector, which took over the bulk of the national investments. This control was conducted by the general public sector and had negative consequences, mainly counting on the general public treasury as a financier of all economic activities. Besides, the general public sector became the main user of the labor force in society. Also, an industrial base was being built within factories, and productivity and repair companies. These enabled the financial set-up to realize the relative diversity of national income, and resulted in the relative stability and high and equal levels of income between individuals in society. The main project conducted by the public sector was the Great Man-Made River Project, which was classified as one of the most important comes in the world (Salama &Flanagan, 2005).

2.5.2.3 Budgeting in Libyan Government

Apart from the development plan in 1994-1996, the budget of the transformation or development plan has been ready annually. Moreover, the development plan and the executive budget have been incorporated. The executive budget in Libya is composed of primary components such as wages and salaries, and the second component consists of administrative expenditures. Following the merger development arrangement with the

executive budget, a third part of the budget was added. Thus, the budget in Libya was split into three parts. Table 2-2shows some indicators relating to revenues and expenditures.

Looking at the Table 2-2, it is clear that the last years of economic sanctions had created a budget deficit, especially in 1998. Despite the excess in 1999, it was the year that the international sanctions were suspended. The excess was relatively thanks to high oil costs. Also, there was a deficit in the subsequent year 2000, via impact of sanctions continuation. This resulted in a decline in oil production and increased allocation of the administrative budget and development plan. The year 2000 should be paid attention to, as it was the last budget to realize a deficit, and each subsequent budget has achieved a surplus, while 2008 witnessed the very best surplus, where it reached an amount of LD 32 billion. This was a logical consequence of the rise in oil prices and is unprecedented.

Looking at other sources of income, such as taxes, and customs and services, they have been graceless. There has been a clear impact after the issuance of new laws that encourage investment. Some provisions of the Customs Law No (67) of 1972 have been changed and Free Zones Law No 9 of 2000 was issued (RCC, 1972). This law has contributed to lower the tariffs of some imported goods. Also, the tariff protection of local products has been removed. The aim of this action was to reduce or break the monopoly that was practiced by some public companies on their products and also to encourage competition. This of course, had a negative impact on the government treasury. The customary proceeds of which had been dropped after the law had been passed (for more details see Table 2-2). Plus, new versions of the customs law have been issued as Customs Law No (10) 2010, to change some articles in previous laws (LGPC, 2010c).Also, the Income Tax Law No (64) of 1973 and the Stamp Tax Law No (65) of 1973 were abolished (RCC, 1973a, 1973b). Besides, the general tax on income has been cancelled and only other types of tax have been retained. There have been new

laws issued; for example, Income Tax Law No (11) and Stamp Tax Law No (12) of 2004 have been released (LGPC, 2004a, 2004b). Despite the reduction in tax rates and facilities provided, the effects of these laws were contrary to expectations, and the effect was positive, with double the state revenues acquired from taxes. This is confirmed by Table 2-2. Income Tax Law No (11) and Stamp Tax Law No (12) of 2004 have been modified by Income Tax Law No 8 and Stamp Tax Law No 7 of 2010 respectively (LGPC, 2010a, and 2010b). The influence of the new law versions has not been clarified yet.

Table 2-2: Summary of Actual Revenues and Expenditures (Million LD)

Years	Revenues of Oil	Revenues of Non-Oil				Total Revenues	Expenditures				Surplus or - Defect
		Customs	Taxes	Others	Total		Administrative	Development	Extra Budget	Total	
1998	2551.0	519.0	535.0	761.0	1815.0	4366.0	3163.8	485.2	792.0	4441.0	-75.0
1999	3444.4	519.5	620.1	273.0	1412.6	4857.0	2966.9	794.1	535.0	4296.0	561.0
2000	2203.0	395.2	637.1	1426.9	2459.2	4662.2	3153.2	1541.0	556.0	5250.2	-588.0
2001	3603.0	362.5	706.8	1326.5	2395.8	5998.8	3596.6	1539.0	496.0	5631.6	367.2
2002	6551.0	364.0	715.1	944.0	2023.1	8574.1	4210.3	3701.7	575.0	8487.0	87.1
2003	3929.0	384.8	890.6	1709.2	2984.6	6913.6	3577.7	2530.0	758.5	6866.2	47.4
2004	19956.0	852.6	1037.6	1511.5	3401.7	23357.7	6720.0	6718.0	3792.0	17230.0	6127.7
2005	34378.0	548.0	1044.0	1247.0	2839.0	37217.0	8282.0	10273.0	2788.0	21343.0	15874.0
2006	43566.0	526.9	1259.7	1735.4	3522.0	47088.0	9054.0	11039.0	1285.0	21378.0	25710.0
2007	48638.3	528.0	1376.0	2824.0	4728.0	53366.3	11890.0	18993.0	0.0	30883.0	22483.3
2008	64417.0	499.2	2790.5	5034.5	8324.2	72741.2	11874.8	28903.3	0.0	40778.1	31963.1
2009	35347.0	1150.7	2836.2	4991.6	8978.5	44325.5	13757.4	17651.8	8915.3	40324.5	4001.0

Sources: Libyan Central Bank (2010)

2.5.2.3.1 Budgeting System in Libya

Following the lifting of the Security Council sanctions on Libya in 1999, the country launched economic, administrative and financial reforms, and one of them was to improve the public budgeting system that was operating under the line-item approach.

Globalization has greatly helped in the development of the organizational field of national governments. Globalization began in the mid-nineteenth century and increased in intensity in the late twentieth-century (Fleishman &Mumford, 1989). Globalization has been associated with fundamental changes in the three fields of communication, investment, and learning (Friedman &Deek, 2003). Advances in technology, such as satellite television and the Internet, provide unprecedented access to information about the structures of other national governments and the initiatives and reforms they have undertaken. In an era of global governance, international influence and interaction among national governments have never been greater (Stiglitz, 2003).

At the national level, the Libyan Government has pledged itself to improve administrative effectiveness and efficiency. The Libyan local government uses a pure line-item budgeting system structure. Currently, Libya has a traditional line-item budgeting system in which ministries receive budget allocations based on the anticipated costs of their inputs. However, the government has planned to make the public sector more efficient and effective in order to improve its financial performance. In recent years, there has been widespread criticism of the system of budgeting in Libya. The chief criticism is that the budget only covers one year at a time and that the data is inadequate. The budget in Libya is highly centralized. However, the Libyan government launched an economic reform programme in 2005 with the assistance of World Bank (World Bank, 2005).

2.5.3 Profile of Public Universities and Higher Learning Institutions in Libya

Libya's first university, the University of Libya, was set up in 1957. Today there are twelve public universities and five higher learning institutions. Libyan public universities have become more contemporary in outlook, with each university attempting to develop its own competitive strengths and positioning itself as a centre of selective excellence. These universities and higher learning institutions are under the supervision of the Ministry of Higher Education leading to their characteristics, such as organizational structure or curricula, being fairly uniform. The medium of instruction in all universities and higher institutions is Arabic, except for the Departments of English or other languages, as well as for some technical faculties such as engineering and medicine, where the medium of instruction for some courses is English. In Libya, higher education is free for both undergraduates and postgraduates.Table 2-3shows the profile of the Libyan higher learning institutions

Table 2-3: Universities and Higher Institutions Funding in Libya for 2006 to 2009

Year	2006		2007		2008		2009	
University/Institute	**Fund**	**Spent**	**Fund**	**Spent**	**Fund**	**Spent**	**Fund**	**Spent**
University of Garyouins	90,02	29,63	90,91	66,47	22,98	19,06	22,75	22,75
University of Allfath	93,03	45,99	52,69	47,64	43,67	28,27	56,02	56,02
University of Omar Allmogtar	52,71	36,57	70,31	44,67	11,20	10,84	23,47	23,47
University of 7 October	40,67	30,69	30,74	29,03	11,26	11,165	15,68	15,68
University of 7 April	54,32	43,42	76,88	68,66	11,90	10,65	14,88	14,88
University of Westhren Mountain	50,481	32,15	37,89	29,62	5,950	3,013	9,625	9,625
University of Allmargib	45,99	13,98	24,96	20,28	5,600	3,149	11,20	11,20
University of Nasser	18,48	6,058	19,92	18,70	5,250	5,243	6,562	6,562
Arab Medical University	12,25	13,23	14,00	13,83	9,100	9,027	15,93	15,93
University of Sabaha	48,55	22,17	61,08	58,04	11,20	5,244	15,40	15,40
Allfath medical University	14,00	9,100	14,00	11,90	9,52	553,0	14,88	14,88
University of Sirt	38,18	11,00	57,82	52,22	7,000	5,063	12,25	12,25
Mosarth Industrial Higher Institute	5,250	4,200	3,699	3,500	4,200	4,760	5,250	4,305
Higher institution of Beniwaled	5,075	4,620	4,970	4,410	5,005	4,760	5,740	4,830
Higher institute of civil aviation and meteorology	5,005	4,515	5,110	4,375	4,935	4,690	4,480	4,130
Zeltin higher institute of engineering	5,775	5,180	5,355	4,970	5,740	5,600	5,775	5,355
Total	584,0	316,4	575,4	483,1	179,2	135,2	244,9	241,8

Source: Libya higher Education (department of computer and information, (2009). All figures are expressed in Million USD using the exchange rate$1=LD3.5

Table 2.3 shows the allocated fund approved by the government to each university and institution of higher learning, and the amount of fund spent by these organizations. From the table, universities seem to receive more funds than institutions of higher learning. This situation might occur because universities consist of more faculties and employ more highly qualified staff when compared with institutions of higher learning. Looking at the total amount of fund allocated, and comparing it with what was spent each year, it is clear that some of the allocated funds were not spent. The other interesting point is that although some funds were not spent in that a year, the fund allocated in the following year matches the one allocated in the previous year. This suggests that there might be no measurement of what is achieved and what is needed. In

addition, it is apparent that the funds allocated are not modified to fit the needs for each university and institution of higher learning.

2.6 Conclusion

This chapter presents a review of the basic concepts of public budgeting. The chapter also reviewed related literature on public budgeting systems, namely PBBS and line-item budgeting system. Evidence from prior literature suggests that PBBS can significantly improve the efficiency of spending public funding by the central government and its agencies and municipalities.

The chapter also presented the background of the Libyan budget practices and recent budget allocations as well as detailing recent funding for Libyan higher learning institutions. The next chapter discusses the current theories of innovation diffusion including the Diffusion Contingency Model for Government Accounting and its applicability to Libya.

CHAPTER THREE

LITERATURE REVIEW ON INNOVATION DIFFUSION THEORIES

3.1 Introduction

Researches on innovation adoption in accounting are rather limited (Ouda, 2008). While innovation adoption has been studied extensively, most of the researches are focused on the fields of agriculture, medicine, psychology, and social science. Even more limited are studies on innovation adoption with regards to public sector accounting in developing countries, especially on the question of relevance and compatibility of innovations in Western governmental accounting to developing countries.

This chapter contains the review of relevant literature and theories on innovation diffusion, particularly in terms of government accounting innovations, in order to find answers to the research questions. In more practical terms, this chapter draws the basis for developing the conceptual framework of this study. In Section 3.2 this chapter will discuss the bases of Innovation Diffusion theory, including its definition, process, and attributes. It then continues to discuss the Contingency Theory in Section 3.3 and the Institutional Theory in Section 3.4. These are then followed by Section 3.5 that provides a discussion on the government accounting diffusion theory, especially in light of the diffusion-contingency model as proposed by Rogers (1995). Section 3.6 looks at the application of the diffusion-contingency model to budget reform in Libya as well as the political and socio-economic stimulus that have brought about the reform. Finally, Section 3.7 concludes and summarizes the chapter.

3.2 Theories

In this study different theories such as diffusion, contingency, institutional theory, organisational change theory, and government accounting diffusion theory:

3.2.1 Diffusion Theory

The theory of diffusion of innovation (DI) is concerned with the communication and adoption of new ideas and technologies. Information system researchers, as well as researchers in other disciplines, are progressively making use of the theories of diffusion innovation to study adoption and implementation. The main objective of these studies is to investigate whether potential users perception of an innovation influences their adoption of it(Al-Gahtani, 2003; Moore &Benbasat, 1991; Prescott &Conger, 1995; Slyke, Lou,&Day, 2002).

Lancaster and Taylor (1986) proposed that from an epistemology dimension, researches on diffusion of innovation can be looked at within the context of social system development and change rooted in anthropology and sociology. This has been expanded in later research to include the traditions of rural sociology, medical sociology, geography education, and marketing (Gatignon &Robertson, 1985; Lancaster &Taylor, 1986). The vast number of studies on innovation diffusion has formed a thoroughly studied theory in the discipline. The diffusion of innovation theory, according to Chambers (1971) and Huff (1991), explains the factors that affect the assimilation of innovation into a social system.

Rogers (1995) stated that to be considered as new, an idea does not have to be new in its entirety, that is, the idea doesn't have to exist before. Rogers suggested that an idea could be perceived as new to an individual when he has not been exposed to it before. Similarly, an idea could be perceived as new by an organisation or a society when they haven't been exposed to the idea before.

In discussing the adoption of new ideas, Rogers (1995) developed the theory of diffusion of innovation. According to Rogers, innovation is defined as a type of concept,

procedure or a practice that can be new to the participants and not necessarily be totally ”new”. As mentioned earlier, an innovation is considered new in the context of those participants who have not been exposed to such a concept, procedure, or practice, and consequently have no prior opinion of accepting or rejecting the “innovation”. In this regard, Rogers likened ‘“innovation” to “technology “and concludes that both terms are interchangeable in their usage.

Rogers’s (1995) theory of diffusion of innovation has been widely cited by researchers from various disciplines. Under the theory, Rogers (2003) defines diffusion of innovation as the process in which the innovation, or the new idea, is disseminated through specific channels over time among the members of the entity. Additionally, Rogers (1995) also asserts that the innovation decision is a process of seeking and processing information in order to minimize the ambiguity of the benefits and the drawbacks of the new idea. A decision to make full use of innovation is considered as adoption, while the opposite is to reject it. In the context of innovation decision, many scholars have agreed that the perceived characteristics or properties of the innovation affect the adoption of the innovation (Rao &Yamada, 1988; Rogers, 1983; Srivastava, 1985).

The theory of diffusion of innovation is also concerned with understanding why certain innovations are used and spread throughout a given population, while others are not. Empirical studies have examined the rate of diffusion of all types of innovations. In these studies, diffusion is defined as a social process where information about the innovation is communicated over time to reduce the uncertainty about it. Thus, diffusion is driven by uncertainty reduction behaviour among potential adopters. In general, these studies examined the factors that contribute to successfully implementing an innovation (Beaumaster, 1999; Golub &Johnson, 1996; Markee, 1994; Matey, 2002; Rogers, 1995; Whitten &Collins, 1997).

As can be seen from the above discussion, diffusion of innovation and adoption of innovation are completely distinct and separate processes. According to Rogers (2003), while diffusion of innovation occurs as a group interaction process within an organisation or society, the adoption of innovation is associated with individual actions. Rogers defines adoption as "…the mental process to which the individual first acquire the knowledge of innovation and formulate the decision of whether to accept or reject the new system". However, he views the diffusion process as different from adoption and defines it as the transformation of a new idea from its creator or its source to the end user.

According to Rogers (1995), the innovation decision process has five distinct stages. They are knowledge, persuasion, decision, implementation, and confirmation. The knowledge stage occurs when an individual, or decision making unit, learns of the innovation's existence and obtains some information on its functioning. The persuasion stage occurs when the decision making unit forms a favourable or unfavourable attitude towards the innovation. Whereas, the decision stage occurs when the decision making unit engages in activities that lead to a choice to adopt or reject the innovation. On the other hand, the implementation stage occurs when the decision making unit seeks reinforcement of an innovation-decision already made and reutilizes the innovation. Figure 3-1depicts the five-step process, as defined by Rogers (1995, p. 162-86).

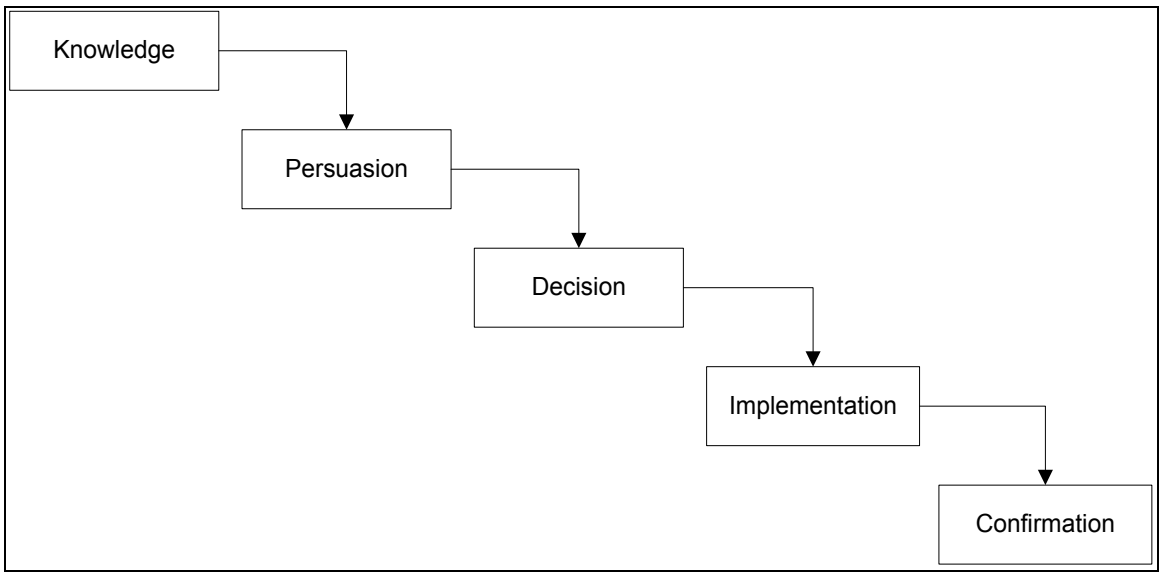

Figure 3-1: Innovation decision process

Source: Adapted from Rogers (1995, p.162)

Under the innovation decision process, the knowledge stage could be the most critical stage where a user becomes informed about the innovation. In the context of the knowledge stage, Libya as well as many neighbouring Arab countries, are still not well informed and updated with the latest innovations due to insufficient information pertaining to innovations that reached the countries. In addition, the lack of experts and skilled workers, coupled with lack of good telecommunication system make it even harder for many of these countries to acquire adequate knowledge about innovations.

The second stage of the innovation decision process involves persuasion. It can be considered less critical than the first, which is the knowledge stage. In the persuasion stage, decision makers begin to actively seek more information about the innovation.

The third stage of the innovation decision process, which is the decision stage, is where the decision makers decide on whether to adopt or reject an innovation. This is the stage of the innovation decision process that this research is interested in. That is, to study whether or not academicians and practitioners in Libya will adopt innovations in accounting in their budget reform.

As pointed out earlier, an innovation must pass through an innovation decision process (Rogers, 1995). This decision process takes place in the long term, involving

information-seeking and processing activities on the part of members of an organization or a decision-making unit. It is a process through which an individual or a decision maker in an organization passes from firstly acquiring knowledge of an innovation to forming an attitude towards the innovation, then to a decision and confirmation on whether to adopt or reject the implementation and use of the innovation (Rogers, 1995). This model of the innovation decision process essentially seeks to portray the innovation process not as a single event, but rather as an organizational learning process where the adopters go over the learning curve, understand the potential of the innovation, identify and develop uses for the innovation, modify their work practices to fit the innovation, and develop mechanisms to monitor and manage the innovation in their environment.

3.3 Factors Influencing Adoption of Innovation

In the context of innovation adoption, Rogers (1983) discovered that the rate of adoption of an innovation is influenced by five variables. These variables are the perceived attributes of the innovation, the communication channels, the nature of the social system, the extent of influence of agent of change, and the type of innovation-decision. This can be seen in Figure 3-2.

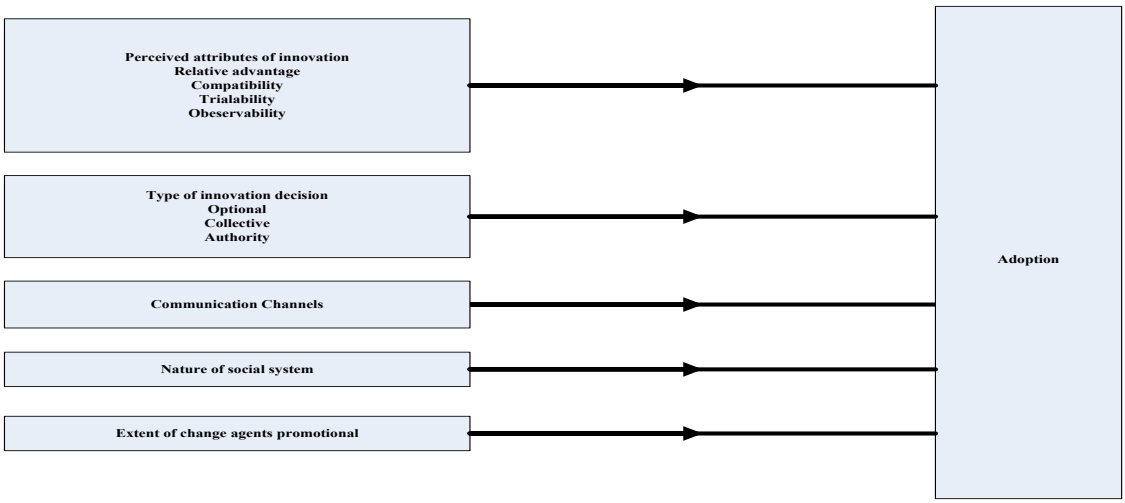

Figure 3-2: Diffusion of Innovation Model

Source: Adapted from Rogers (1983: p.233)

3.3.1 Perceived Attributes of Innovation

Innovation scholars, concerned with understanding what influences successful adoption and implementation of innovation, have examined the attributes of an innovation. Three characteristics have been found to consistently facilitate successful adoption and implementation. The three characteristics are compatibility, complexity, and relative advantage (Greengard, 1998; Karahana, Straub, &Chervany, 1999). Compatibility is the degree to which an innovation is perceived as being consistent with existing values, past experiences, and the needs of intended adopters. Relative advantage is the degree to which an innovation is perceived as having greater benefits than other alternatives. In other words, the innovation ranks higher in positive characteristics than other practices, tools or techniques.

Rogers (1983) also agrees that the three attributes of innovation, which have been mentioned above, also affects its adoption. However, Rogers argues that successful adoption of an innovation is also dependent on additional attributes, which are trialability and observability. Rogers defines relative advantage as the extent to which anew innovation is perceived as, better, more beneficial, or of higher utility than the current process. The relative advantage construct is measured by how participants perceive the innovation as being superior to the current ones. Relative advantage is one of the best predictors of the rate of adoption of an innovation.

Meanwhile, Rogers (1983) defines compatibility as the extent to which an innovation matches the parties' culture, values, experiences, and needs. The higher the degree of compatibility, the higher the rate of adoption as the innovation does not represent a significant change from the current standards or norms.

The third characteristic of innovation that affects its adoption is complexity, or ease of use. The more complex the innovation is the more difficult it is to use. Rogers (1983) argues that the more complex an innovation is, the lower the possibility of it being

adopted. The complexity attribute of an innovation can also be associated directly with its compatibility attribute.

Lastly, Rogers (1983) views trialability and observability as being closely related. In that, they both allow the participants to examine the innovation prior to forming an opinion of adoption.

3.3.2 Communication Channels

Communication channels are the media outlet in which awareness and knowledge about the innovation are transmitted to the members of the social system. The communication can take two forms. These forms are mass media, and interpersonal. Mass media communication encompasses external sources of information and is a one-way exchange of information. Interpersonal communication refers to the internal flow of information within the social system and provides a two-way exchange of information with the population in which the innovation is being introduced. Since interpersonal communication relies on two-way exchange of information within a social system, any increase in the number of innovation adoption among the members of the social system will also increase the amount of two-way information exchange within the social system. Consequently, as more members of the social system adopt the innovation, the level of influence on the remaining members of the system, who have not adopted, will also increase. This cumulative influence on the members of the social system is referred to as the "diffusion effect" (Rogers, 1983).

Bass (1969) proposed diffusion model that was based on the premise that potential adopters of innovation are influenced by communication. In the Bass model, communication takes two general forms, internal, and external. Bass identifies the two forms or sources of communication as word of mouth, and mass media. Tanny and

Derzko (1988) later expanded the definition of the external communication channel to include all sources of communication from within the social system.

Nilakanta and Scamell (1990) studied the impact of information sources and communication channels on the process of diffusion of innovation. Their study emphasized the identification of the influential impacts of information and communication, and the determination of how and to what extent these impacts effect diffusion of innovation. In order to measure the influence of the impacts, they divided the diffusion of innovation process into three phases. The phases are, the beginning phase, the adoption phase, and the implementation phase. The authors found out that different information sources and communication channels influence phases of the diffusion process differently. No one channel of communication was found to be influential concerning the diffusion process in all three phases and different information channels were effectively influential in the innovation-decision process in different phases.

3.3.3 Social System

A social system consists of inter-related population sharing common objectives (Rogers, 1983). From the perspective of innovation, the social system defines the boundaries in which the diffusion of the innovation will occur. Additionally, the structure of the social system also affects the diffusion process within the system. In general, a social system has three components that affect diffusion process. These components are the system effects and system norms on the diffusion process, the effects of the change agent, and the type of innovation-decision.

3.3.4 Change Agents Promotional Efforts

Rogers (1983) suggested that in the innovation decision process, members of a social system are often exposed to influences by the change agents within that system. Rogers

defined a change agent as any entity that attempts to influence the innovation decision by members of a social system through use of promotional efforts. The change agent influences innovation decision in a direction deemed desirable by the agent, which is usually towards the adoption of the innovation. The change agent develops or identifies a need for change and promotes awareness of the need to the members of a social system. Although a change agent usually influences the adoption of an innovation, it can also slow down or prevent the adoption process.

3.3.5 Type of Innovation Decision

Another influential variable on the diffusion process is the type of innovation-decision, which exists within the confines of the social system. Rogers (1983) names three types of innovation decision: optional, collective, and authority. Optional innovation decisions are those made by an individual based on choice and only represent the influence of other participants on the decision. Collective innovation decisions are those in which participants choose to adopt innovation based upon a consensus among the participants. Authority innovation decisions are decisions made and imposed by an authority imposed on the participants. The authority usually possesses the power to enforce compliance or adoption.

Rogers (1983) recognizes that members of a social system have differing characteristics and degrees of innovativeness, which explains the time sequence of adoption of an innovation. The differing degrees of innovativeness cause members of the adopting population to adopt an innovation at differing time points. Rogers categorizes adopters as innovators, early adopters, early majority, and laggards.

3.3.5.1 Prior Literature on Diffusion of Accounting Innovation

Diffusion research has been applied in marketing, education, medicine, agriculture and technology to measure the adoption of an innovation and the variables affecting the

adoption. Similarly, a number of diffusion researches have also been conducted in the field of accounting, especially on accounting standards in the United States of America. For instance, Tritschler (1970) investigated whether the adoption of an accounting innovation is a function of the attributes of the innovation, namely compatibility, simplicity, divisibility and communicability, relative to the social system into which it was introduced. The findings indicated that the perceived compatibility of an innovation increases its rate of adoption. This finding supports Rogers's theory of the diffusion of innovation. Additionally, the simplicity of the application of an innovation given the present knowledge was also found to be positively associated with its rate of adoption. However, differences were found between smaller firms and larger firms concerning the acceptance of the complexity of the innovation. In the meantime, divisibility was also found to increase the rate of adoption of an innovation. Divisibility is the degree to which a portion of the innovation can be adopted. Divisibility increases the trainability of an innovation by reducing the participants' level of risk. Communicability is the degree to which an innovation can be observed and communicated by participants. A higher level of communicability increases the adoption rate of an innovation.

Comiskey and Groves (1972) examined the applicability of adoption and the diffusion of innovation theory to accounting innovations. The study modified Rogers's diffusion of innovation model to include accounting innovation. In this study, the adoption frequency of distribution, the conservatism principle, and the characteristics of the innovation were investigated. The main hypothesis, that adoption distributions were normal, was not supported, thus, lending support to Rogers's classification of adopters by categories. The results indicated that the perceived characteristics of an innovation affect the adoption of an accounting innovation.

3.3.6 Contingency Theory

Many of the researches in technology and organizations have been informed by the contingency theory. According to contingency theorists, organizational structure delimits responsibilities, control over resources, authority to make decision communications relationships, and other matters; thereby providing organizations with boundaries within which efficiency may expected (Thomson, 1967). In general, contingency theorists focus on identifying the contingent factors of the environment that influence organizational structure arrangements the most (Lawrence &Lorsch, 1967; Thomson, 1967).

According to contingency arguments, the technical environment, as researchers define it, is likely to be composed of factors such as size, technology, strategy, complexity or environmental hostility (Pugh et. al., 1969; Khandwalla, 1977). Therefore, technical effectiveness and efficiency are determined by the functional adaptation to particular elements of the environment. In other words, contingency theorists argue that organizational performance is achieved by reducing the "friction" that exists between structural and environmental elements. In the instances where a gap exists, the structure must adapt.

Although in the last three decades studies driven by the contingency arguments have focused on a range of environmental elements, technology has continually remained a prominent predictor of structural arrangements. The pioneering work of Woodward (1965) gave early emphasis to internal technology as the dominant factor that shapes organizational structure. Woodward examined output performance for manufacturing firms and found that an optimal structural arrangement existed for each type of technology that would yield high output levels. Subsequent studies, such as that done by Hage and Michael (1969), and Thomson (1967), have built upon her works and further examined the influence of technology on structure. While the studies of Woodward and

her contemporaries measured a narrow range of technologies such as mass and batch production technology, other studies have included definitions of technology such as work procedures, techniques, workers' skills and knowledge, as well as hardware (tools and machines) and software (Koehle, 2000; Rogers, 1995; Scott &Bruce, 1994; Smyth, 2001; Tushman &Richard, 1990; Wolfe, 1994).

In spite of the diversity of definitions and measures of technology, Scott and Bruce (1994) suggested that there has been a considerable consensus among contingency theorists concerning which aspects of the technical environment most significantly predict structural arrangements. Building on earlier works, most analysts emphasize the significance of environmental complexity, uncertainty, and independence in predicting structural arrangements. Furthermore, Galbraith's (1973) version of the contingency theory suggests that complexity, uncertainty, and interdependence tap deeper dimensions – the demand for information processing.

Access and exchange of information and knowledge is critical to the performance of work in any organization (Koehle, 2000; Lai &Mahapatra, 1997; Matey, 2002; Rogers, 1995; Smyth, 2001; Tushman &Richard, 1990; Wolfe, 1994). Therefore, the greater any of the three predictor variables, the higher the amount of information that must be processed to accurately and efficiently carry out work activities. A series of structural adjustments that organizations must make to enhance their capacity and capability were outlined in prior researches by Campion, Medsker and Higgs (1993), Karahana et al. (1999), Raj and Bajwa (1997), Rynes and Rosen (1995), and Tushman and Richard (1990).

In general, contingency theory has contributed significantly to understanding the importance of technology in determining performance vis-à-vis organization structure. Additionally, while the cumulative results of technology implementation research seem to remain somewhat in dispute, it has contributed to an understanding that an optimal

organizational structure is dependent on technology requirements. In this sense, an information system or technology affects an organisation's capacity to process information in its environment. Thus, technology is viewed as a mediating variable in the technology-structure causal relationship (Koehle, 2000; Lai &Mahapatra, 1997; Matey, 2002; Rogers, 1995; Smyth, 2001; Tushman &Richard, 1990; Wolfe, 1994).

While contingency theory has provided invaluable insights into the technology organization interaction by concerning itself with achieving efficiency via structural adjustment, the theory remains hampered by certain limitations. Firstly, since most contingency theorists postulate a direct link between technology and structure, their work propagates a materialistic ontology. The intentions and acts of those who design, purchase, or use technologies, plays a minor role in either theory or analysis. Thus, the contingency theory seems to ignore human actions as a potential cause of observed relations (Barely & Tolbert, 1997; Beaumaster, 1999; Campion et. al., 1993; Koehle, 2000; Lai &Mahapatra, 1997; Matey, 2002; Rogers, 1995; Smyth, 2001; Tushman &Richard, 1990; Wolfe, 1994). Such a weakness may partially explain why the findings of contingency theory studies are relatively weak.

Secondly, the contingency theory's vision is primarily static. Few researchers have sought to do more than correlate attributes of technology with selected characteristics of a formal structure. Moreover, contingency theory also has some limits in providing analytical tools for understanding the process by which an organization implements new technology.

3.3.7 Institutional Theory

Institutional theory suggests that organizational structures, programmes and practices are adopted for social and symbolic purposes, thereby augmenting the limits of the more rationalistic explanation of decision making. For example, perceived "rational" decision about acquiring new technology and its associated procedures and structures are

invested with socially shared meanings rather than simply being responses to technical demands.

For the purpose of this study, the notions of institutionalism, as proposed primarily by Meyer and Rowan (1992) with some contributions from others, such as Oliva et al. (1992), and Scott and Bruce (1994) are to be adopted. According to them, institutions permeate our everyday life. For instance, we may think of social institutions such as contracting, marriage, or voting, and organizational institutions as job evaluation or accounting. What these practices share in common is that they all commonly encompass a shared understanding of social reality, which demands certain behaviour on the part of organizational members. Some intuitionalists suggest that institutions operate to produce common understanding of accepted and appreciated meaningful behaviour (Beaumaster, 1999; Howard, 1999; Matey, 2002). Therefore, if one is to understand organizational activities rather than looking solely at more rational technical elements and influences, he or she needs to examine the social and environmental forces first.

In order to understand and explain organizational structure and practices, we must understand how institutionalized rules come to function as rationalized myths (Alvarez, 1999; Strang &Meyer, 1993). The rationalized myth function gives meaning and shapes action within an organization. The myth is rational in that it identifies various social and symbolic purposes as technical ones. Moreover, it specifies in a rule-like way the means to peruse these technical purposes rationally. Thus, myth plays a particularly critical role in institutional theory. It “explains” the way in which activities, the origins of which may be symbolic or social, are linked to appropriate organizational objectives (Barely and Tolbert, 1997; Oliver, 1999; Scott &Bruce, 1994). However, these beliefs are myths in the sense that for their efficacy and reality they depend on the fact that they are widely shared belief systems that are sustained by individuals.

Numerous studies have used institutional theory to examine the role of change in the society and organizations (Scapens, 1994: Brignall &Modell, 2000; Riberio &Scapens, 2006: Bogt, 2008; Soin, Seal, &Cullen, 2002).

Institutional theory have been used by other studies in order to provide a clear understanding on the role of the change of accounting in the society and organisations (Brignall& Modell 2000; Bogt, 2008; Burns &Scapens, 2000; Burns &Baldvnsdottir, 2005; Ribeiro&Scapems, 2006; Scapens, 1994; Soin, Seal,&Cullen, 2002). Scapens (1994) for instance, examined how accounting practices as stable rules and routines under a stable environment, provides the institutional basis for decision-making changes with the introduction of new routines which later becomes institutionalised and form a part of the institution. His study shows that the routinisation of practices in this case of accounting can both shape and be shaped by the institutions and influences the organizational activity and their relationships within the units. In another study Burns and Scapens (2000), used institutional theory for developing a conceptual framework for the change in accounting where they also mentioned that achieving the change of accounting will be easier if new routines, such as accounting practice, are consistent with existing routines rather than challenging preceding routines.

In another study by Burns (2000), the role of facilitators and barriers of change by power and politics were investigated, and he found that people and authorities, who have the power to facilitate change and new ways of doing things, and those with power, can also oppose or hinder change.

Taking up from the idea put forward by Burns and Scapens (2000), Soin, Seal and Cullen (2002) examined the role of management accounting particularly ABC in a UK multinational bank within intra-organisation change. They found that the ABC team had succeeded in institutionalizing a version of ABC and revealed new links between costs and products, although it did not transform the strategic thinking of the banks' senior

management. This is due to the fact that bank's senior management who misunderstood the value of additional accounting information have restricted the institutional change (Soin, Seal, & Cullen, 2002).

A further study conducted by Burns & Baldvnsdottir (2005), found that institutional contradictions have the ability to generate potential openings for accounting change. They emphasized that institutional contradictions can raise questions on the existing institutional organisation. It can be an important tool in questioning the prevailing institution due to its ability in exposing the technical contradictions between new business conditions and the institutionalized research and marketing orientation of the organisation.

3.3.7.1 Government Accounting Diffusion Theories

The area of government accounting innovations research has recently witnessed substantial development. The reform process that took place over the last two decades has stimulated many countries to adopt profound changes in their government accounting and budgeting systems. New Zealand, United Kingdom, Australia, Netherlands, Sweden, Finland, Canada, USA, and Albania, as well as many other developed and developing countries have gone through some sort of government accounting reform (Godfrey et. al., 2001; Ouda, 2008). A number of empirical studies and theoretical models have also been developed to meet the demand of government accounting innovation in these counties (Christensen, 2002; Godfrey et. al., 2001; Jaruga &Nowak, 1996; Luder, 1992; Ouda, 2010). Most of these studies focused on the modelling of the innovation process from a theoretical prospective. As such, there is a need for more empirical studies to be conducted in this area in order to test those models. The following section discusses the contingency model and the diffusion of innovation theory in government accounting.

3.3.7.1.1 A diffusion-contingency Model in Government Accounting

The contingency model that was developed by Luder (1992) has been widely adopted by scholars in their work especially in the Journal of Comparative International Government Accounting Research (CIGAR). However, according to Godfrey et al. (2001), the contingency model tries to explain the difference in government accounting innovations and practices among countries but ignores the characteristics of the innovation itself. Therefore, Godfrey et al. (2001) proposed an integrated diffusion contingency model as illustrated in Figure 3-3, which encompasses the diffusion process, the organizational characteristics, and the characteristics of the innovation itself. According to Godfrey et al. (2001, p. 280), an innovation decision involves interactions between three major players: the public at large, politicians, and government administrators. In the model three contextual variables, stimuli, socio-political factors, and administrative factors, are predicted to influence two categories of intervening variables. These categories are users of government accounting information (by changing their expectations about the data they want), and producers of information (by changing their behavior). This complex interaction of contextual and intervening variables can influence change, either in a positive or negative way. Whilst change itself is dependent on the impact of implementation barriers (barriers to change) that can directly affect the outcome of the innovations process. It so happens that the Luder model has also been developed further. Godfrey, Devlin and Merrouche (1996) modified it and applied it to underdeveloped economies and it has been expanded to include some other consideration of the consequences of innovation in the real world.

Godfrey et al. (2001, p.281) added that "the Diffusion-Contingency Model is based on the assumption that government accounting innovations in a country are the result of an iterative process whereby the interaction of the political, administrative and social actors is conditioned and filtered by the organizational structural variables of the

government (as an organization) and the characteristics of the innovation itself. The Model, therefore, attempts to represent a complex situation where the organizational characteristics of government, which signal the level of innovativeness of the government, intertwine and interplay with characteristics of the innovation itself to determine the success or failure of both the innovation-initiation and the innovation implementation processes."

The Model Set-up

The diffusion-contingency model set-up is shown in Figure 3-3. The lower part of the model is based on Rogers' diffusion of innovation model. According to Godfrey et al. (2001), Rogers divided the innovation process into two phases, which are the innovation phase and the implementation phase. The initiation phase contains two stages: the agenda-setting stage, and the matching stage. Meanwhile, the implementation phase contains three stages: the re-invention stage, the clarifying stage, and the routinizing stage. All in all, the model presumes that the innovation diffusion process emerges through five stages (Godfrey et al., 2001; Rogers, 1995).

The Initiation Phase

As shown in Figure 3-3, the initiation phase consists of two stages. The first stage is the agenda-setting stage, which occurs at the beginning of any diffusion process. The agenda-setting stage focuses on defining the problems and suggesting the solutions to these problems. In this stage the effects of the stimuli represented by the internal and external factors, including the impact of change agent, take place. For most developing and underdeveloped countries, organizations like the World Bank (WB) and the International Monetary Fund (IMF) often act as the change agent and may require particular accounting and budgeting innovations to be implemented (Husain, 1993).

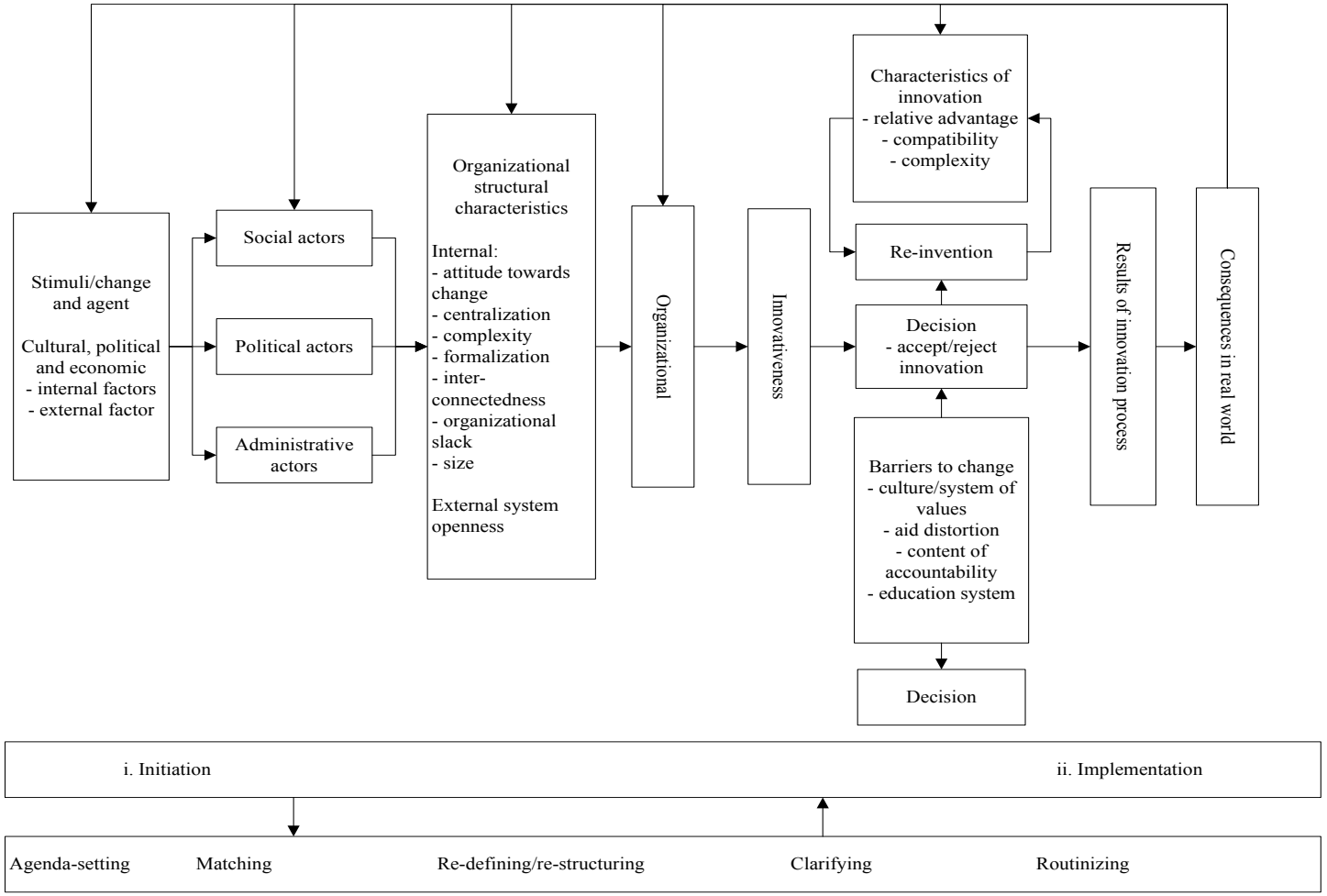

Figure 3-3: Diffusion-Contingency Model for Government Accounting Innovations.

Source: Adapted from Godfrey et al. (2001, p.220)

The second stage under the initiation phase is the matching stage, this is where alternatives defined in the agenda-setting stage are sorted and matched with the need of the organizations. An alternative that matches the organization needs the most is usually chosen. This stage also includes labelling the deficiencies and shortcomings of the old system in order to choose alternative that can help in overcoming the shortage or deficiencies of the old system.

The Implementation Phase

The implementation phase encompasses three stages. The first is the re-invention stage in which the organization makes the necessary rearrangement before implementation. Godfrey et al. (2001, p.284) suggests that re-invention is the stage where an innovation "…may be adjusted (redefined) and/or the organization altered (restructured) to allow full implementation of the innovation to take place." This re-invention stage helps eliminate some of the uncertainties, including technical, financial, and social uncertainties, which can present problems for the innovation process. As such, the re-invention stage can be seen as a stage that facilitates adoption of an innovation rather than rejection of it. Because of this, Godfrey et al. (2001) are in the opinion that implementation decision occurs at some point towards the end of the re-invention stage and not at the end of the matching stage as suggested by Rogers (1995).

The second stage in the implementation phase is the clarifying stage where people start to understand the system and system interaction takes place amongst the stakeholders. Lastly, the third stage, which is the routinizing stage, occurs when the system loses its identity and becomes part of the organization culture.

Organizational Structural Characteristics

According to the model, the organizational structural characteristics and innovation characteristics represent the important factors in the government accounting diffusion process. Godfrey et al. (2001) argues that organizational structural characteristics are

positively associated with the innovation diffusion process. The researchers defined these characteristics as:

i. The attitude towards change in both leaders and the organization;
ii. The degree of expertise within organizational members (complexity);
iii. The degree of formalization or emphasizing of rules inside the organization (formalization);
iv. The degree of connection between members inside the organization and those outside the organization who are linked to the system (system openness).

Innovation Characteristics

As far as the characteristics of an innovation are concerned, both Godfrey et al. (2001) and Rogers (1995) define four innovation characteristics that are significant for innovation diffusion. They name these characteristics as relative advantage, compatibility, complexity, observability and trialability. Relative advantage is defined as the degree to which the new system or technology is perceived to be better than the existing one. Relative advantage is concerned with the economic factors that drive the implementation decision and mandate adoption. Therefore, relative advantage is often seen as a crucial innovation characteristic that influence adoption decisions at both the agenda-setting and the matching stages.

In the meantime, Godfrey et al. (2001, p. 287) defined compatibility as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters", and complexity as "the degree to which an innovation is perceived as relatively difficult to understand and use". They also argued that compatibility and complexity play important roles at the matching and re-invention stages. According to Godfrey et Al. (2001, p.288) potential innovations, being part of the matching process, will be examined for their ability to solve the particular

problem(s) identified at the agenda-setting stage. The assessment of the innovation's potential will be based on the perception of its ability to fit within existing organizational values, experiences and needs that have been set. These, in turn, will be reflections of the organizational structural variables in action at the time of the assessment. In the case where a positive decision is made to implement the innovation, compatibility and complexity will have further roles to play in the processes of re-invention (redefining and restructuring).

The final innovation characteristic identified in the model is observability and trialability. Observability is concerned with whether the innovation outcome is visible to others, and trialability is concerned with whether the innovation can be experienced. Godfrey et al. (2001) stated that observability and trialability are likely to have a greater impact at the agenda-setting and matching stages of the initiation phase. Examples that have been done in East Africa and North Africa also suggest that close regional structural variable(s) may allow observability and trialability to be evidenced within the neighbouring countries (Godfrey et al., 1996, 1999).

3.4 Application of Theories to the Study

The above theories are relevant in analysing the various factors that influence organizations to adopt change and in this case the readiness to adopt PBBS. The theory of diffusion of innovation is concerned with the communication and adoption of new ideas and technologies, and how it impacts the recipients of that change. A user's perception is crucial in the adoption of any innovation or change, which can in turn lead to its success. The contingency theory on the other hand, focuses on identifying contingent factors of the environment that influence organizational structural arrangements and the factors that have a bearing on the organizational performance. It is argued in the theory that technical effectiveness and efficiency are determined by the

functional adaption of particular elements of the environments, and to enhance the performance of the organization it is vital to reduce friction among the various structures of the organization. In this case, an organization must consider adapting to the change if it wishes to enhance its performance. Hence it can be said that both theories are related to the study of adoption of change and these theories are considered relevant to explain and answer the research questions in this study.

3.5 Implementation of Budget Reform in Libya

Libya, like many other traditional state-run economies, has made substantial steps towards reforming its economy since the collapse of the socialist block two decades ago. According to the German Marshall Fund of the United States (GMF), Muammar Gadhafi had emphasized on several occasions the need for change in Libya to meet the competitive requirements of the twenty-first century (GMF, 2010). The need for the reform has also been debated by charismatic figures of the new generation like Gadhafi's son, Saif al-Islam. According to the International Monetary Fund (IMF) report for 2010, Libya has taken substantial steps towards the reform, like the privatization of the banking sector, the unification of the state budgets, and encouraging the investment from local and foreign private sector.

To discuss the issue of the reform development in more detail, a further elaboration of the process over the last two decades may well be useful in order to portray the situation comprehensibly. As early as the 1990s, Libyan decision makers were already aware of the need for economic reform in the country, especially following the decline of the eastern economic model such as in the former Soviet Union. Nevertheless, Libya has gone through tremendous political events and substantial socio-economic changes that stimulated the current reform process. Economically, the impacts of the international sanctions imposed on Libya in 1992 for the alleged Lockerbie problem and the severe fall of oil prices to around 10 US dollars in the late 1980s and early 1990s

had created strong pressure on the state treasury and foreign currency income. On the social front, Libya, like other neighbouring Arab countries in the North Africa, had experienced a demographic explosion. In 1995, the younger generation, ranging between 15 and 18 years old, represented around 39 present of the population. This new baby boom was pressuring the economy to expand and to be reformed so as to generate necessary new jobs, especially in the private sector. The public sector was already huge, absorbing around 800,000 jobs.

In the second half of the 1990s, Libya's leader began efforts to confront these problems. In order to show goodwill towards the international community, Libya handed over the suspects of the Lockerbie problem in 1999 for trial in the Netherlands. The results of this move were the suspension of the UN sanctions and restoration of the country's relations with western countries, especially the United States of America and the United Kingdom. A group of reformists were also assigned by the country's leader to lead the reform process. Of these were former General Secretary and then Ambassador to Italy, Abdel Ati al-Obeidi, Former Foreign Affairs Secretary, Abdelrahman Shalgam, Former Head of External Security, Musa Kusa, and Former Justice Minister and then Ambassador to the United Kingdom, Mohamed Belqasim Zwai (GMF, 2010). All of these people were instrumental figures in the team that oversaw the reform and the reinstatement of relations with influential powers like the United States of America. The team also played a significant role in dealing with the consequences of the Lockerbie problem.

Furthermore, the most significant event which represented the turning point in the reform process in Libya was the country's decision in 2003 to dismantle its nuclear facilities to stop any further misunderstanding with the western countries, especially the United States of America and the United Kingdom. This move by the Libyan government was also seen as an affirmation of the country's good intention towards

international cooperation, investment, and trade. After 2003, the reform group, headed by Saif- Al-Islam al-Gadhafi, continued to push towards reform.

Rogers (1995) argues that for innovation to be adopted in an organisation, it needs innovation leaders and champions. These leaders and champions, according to Rogers, should possess certain characteristics in terms of external communication, accessibility, socio-economic status, and innovativeness. These leaders should be charismatic figures and be able to overcome differences in the innovation teams. They should also be able to overcome resistance from others to the new ideas in the organization. In Libya, Saif-Al-Islam al-Gadhafi was the right person at the right place and right time to serve as the innovation champion in the country's reform process. The thirty-eight year old man portrays all the characteristics as suggested by Rogers which were needed for the reform process at that stage.

Given the above, it can be concluded that the stimuli juncture for the reform process was achieved in Libya due to the country's political and socio-economic development during the last two decades. In addition, the change agents who were represented by the international organizations, such as the World Bank and the International Monetary Fund, are currently helping the Libyan government in their reform.

Following the stimuli stage, the reform process moves towards the next stage, this is concerned with the interface between the political, administrative, and social powers. The remarkable efforts of the reformist team that were advocating for the reform and the charismatic innovative leadership of Saif Al-Islam al-Gadhafi, was most likely to facilitate the applicability of the contingency-diffusion model to the Libyan reform scenario, especially in its agenda-setting and matching stages.

From the perspective of the diffusion-contingency model application, it can be said that in Libya the agenda-setting and the matching stages of the model have already been undertaken. Problem identification has been taking place and problems with the old

budgeting system for the country have been identified. The IMF mission report for 2010 stated that, “In this regard, the recent merging of the ministry of planning and finance is a welcome step, which will help enhance public expenditure planning, monitoring, and control. It would be important in the period ahead to improve the legal and administrative framework governing the state budget” (IMF, 2010, p43). Consequently, as the stimuli represented by the internal political and social interactions can be seen from the current debate within the social and political systems in Libya, the external stimuli are represented by the IMF as a change agent. Overall, it can be concluded that internal and external stimuli are triggering the reform in the country.

The reform in many other neighbouring countries in the Arab world and the African continent has also acted as an external stimulus. Godfrey et al. (1996, 1999) showed that regional structural variables in neighbouring countries have some influences on internal political actors in introducing reform and have some effects on the matching stage.

3.5.1 Organisational Characteristics of Libya

The diffusion-contingency model shows the positive impact that the organizational characteristics of the government or the organization can have on the diffusion of innovation of government accounting. In the model, the internal organizational characteristics are represented by attitude towards change, centralization, complexity, formalization, inter-connectedness, organizational slack and size. Meanwhile, its external characteristic is represented by system openness, as can be seen inFigure 3-3.

3.5.1.1 System Openness

A brief look at Libya’s history, both ancient and recent, may help to assess the external openness of the system in the country. History has shown that Libyan society has interacted with many nations, either as trade partners or even invaders. The ancient Libyan people were called “Garamantes”. They were tribal Saharan people who existed

in Libya around 1000 BCE, and controlled the Sahara between 500 BCE and 500 ACE (Najem, 2010, p.90).

Some of the earliest trade interactions were between the Libyan and the Phoenicians. The latter were the first to establish trading posts in Libya, and were also involved in treaties with the Berber tribe to ensure their co-operation in the exploitation of raw materials. In 630 BC, the Ancient Greeks conquered the eastern part of Libya, and that is where they founded the city of Cyrene. Within the next two centuries, the Greeks had established more cities in Libya such as the city of Cyrenaica: Barce (later known as Al-Marj), Euhesperides (present-day Benghazi), Teuchira (present-day Tukrah), and Appolonia (later Susah), the port of Cyrene. These cities, together with Cyrene, were known as the Pentapolis (Five Cities). The Pentapolis, especially Cyrene, became known as the intellectual and artistic centres of the Greek world. These centres were famous for their medical schools, learning academies and architecture. Although the Greeks resisted encroachments by the Egyptians and the Carthaginians, they failed to resist the Romans who eventually invaded Tripolitania (the region around Tripoli). Libya was also subjected to Arab Islamic rule. In 642 AC, the Arab Muslims, under the command of Amr ibn Al-A'as, rode into Libya and conquered Cyrenaica. By 647 AC, the Arab Muslims penetrated deeper into Western Libya and took Tripoli from the Byzantines. The Ottoman Turks, under the leadership of Turgut (Darghouth) Reis, had also conquered Tripoli in 1551. Turgut was later named as the Bey of Tripoli, and then as the Pasha of Tripoli. As the Pasha, Turgut built up Tripoli and adorned it with beautiful architecture making it one of the most impressive cities along the North African coast (Najem, 2010, p.110).In the twentieth century, Libya was subjected to foreign invasion. From 1912 to 1934, Libya was colonised by the Italians. The territory of Libya became known as the Italian North Africa. Later, the territory was split into two colonies, which were Italian Cyrenaica and Italian Tripolitania. These colonies

were run by Italian governors. During this period, it was estimated that between 20% and 50% of the Libyan population had died in the struggle for independence. Libya gained its independence in 1959 and formed an independent kingdom until the revolution in 1969. The Libyan government has undergone tremendous changes on the political and the social fronts since the 1969 revolution. This, among other things, shows the applicability and the acceptance for change in the Libyan society (Najem, 2010, p.110).

From the above discussion, it can be seen that the Libyan society has interacted with different cultures through trade, culture changes, and even invasions. The change in the Libyan society and its interactions with the different ideological and political agendas since the revolution until the present reflects the openness of the Libyan people towards change. This is an indication that "system openness", in accordance to the contingency model, is positive in the Libyan scenario.

3.6 Conclusion

This chapter discusses the theories of innovation diffusion, specifically the Rogers model, the contingency theory, the institutional theory, and selected empirical studies in this area. Most significantly, the chapter discusses in detail recent strategic models in innovation, namely, the diffusion-contingency model for government accounting diffusion. A brief discussion was also provided with regards to application of the model to Libya budget reform. It can be concluded that applying the model to the Libyan reform process would offer greater comprehension of the process and would strengthen the empirical results of this study. The next chapter develops the hypotheses of this study and discusses issues relating to the research design and sample selection.

CHAPTER FOUR

HYPOTHESES DEVELOPMENT AND RESEARCH DESIGN

4.1 Introduction

This chapter explains the methodology of the research which utilizes multi-method approach. This approach will contain both quantitative and qualitative methods. It then outlines the selection of structured questionnaire as the primary data collection method based on the discussion and comparison of advantages and disadvantages of the various methods. Questionnaire survey is the most suited method for this type of research due to the unique and specific data collection requirements set by the initial research objectives and the hypotheses to be developed in the coming sections. These hypotheses are derived from the selected variables identified previously in the review of literature (Chapters Two and Three).

This chapter serves two purposes. The first is to identify, classify and establish links among variables, and develop and build up the theoretical framework and hypotheses of the study. The second is to discuss and consider methodology issues related to sample selection, measurement of variables, model specification and inferential econometrics tests. This chapter also explains the survey instrument, mainly its translation and validation. In addition, this chapter reviews the results of the pilot survey and the instrument's reliability, and the data collection procedure. Finally, the statistical techniques employed for data analysis are discussed. The rest of this chapter is structured as follows: Section 4.2 revisits the variables identified by the literature upon which the research hypotheses are developed. Section 4.3 presents the model specification of this study. What follows is the discussion of the variable measurement. Section 4.5 presents the research method. Section 4.4 presents measurement of variables. Section 4.6 describes the statistical tests employed in this study, and the last section concludes and summarizes the chapter.

In essence, questionnaire survey method adoption is argued based on the advantages it offers and its appropriateness for this type of research. Additionally, population, sampling, and respondent selection are discussed to highlight the extent to which the findings and conclusions can be generalized, transferred, and applied to other case studies and contexts.

4.2 Hypotheses Development

The hypotheses development and the research framework of this study draw heavily on the diffusion-contingency model for government accounting diffusions by Godfrey et al. (2011) as discussed in section 3.2.4. The arguments and discussion of formulating the study's hypotheses also employs empirical work and some related theories such as the development of attitude towards change instruments by Dunham et al. (1989), the diffusion of innovation theory Rogers (1983), management theory by Budner (1962), and the organizational support theory by Ishfaq (2012). Developing the hypothesized relations using strategic models, related theories, and prior empirical literature, helps explain the adoption of information technology and management change. A strategic model includes the constructs and measurements for the readiness to adopt a new system. The diffusion-contingency model for government accounting diffusions by Godfrey et al. (2001) was based on work done by Luder (1992, 1994) and Rogers (1995), but literature showed the lack of tests upon the model, especially those research which tested the model empirically (Ouda, 2008, 2010). Therefore, the following set-up hypotheses are an attempt to empirically examine the diffusion-contingency model of government budgeting reform in the Libyan higher learning institutions

4.2.1 Factors Influencing the Readiness to Adopt Performance based Budgeting System (PBBS)

This section reviews literature related to factors influencing the readiness to adopt PBBS. Six factors are proposed as being associated with the readiness to adopt PBBS in Libyan higher learning institutions. The factors have been extracted from prior literature and strategic models. The factors are: (i) relative advantage, (ii) organisational support, (iii) satisfaction with Line-Item Budgeting System, (iv) barriers, (v) tolerance for ambiguity and finally, (vi) users' training. In addition, the study tests the moderating effects of attitude towards change in the relationship between relative advantage and the readiness to adopt PBBS, and in the relationship between tolerance for ambiguity and the readiness to adopt PBBS.

4.2.1.1 Relative Advantage (RA) and the Readiness to Adopt PBBS

Relative advantage is the extent by which fresh or new ideas are perceived to be relatively better than current ones (Rogers, 1995). In other words, the greater an innovation's relative advantage to available alternatives, the more likely it is that the innovation will be accepted (Robey &Zmud, 1992). Moore and Benbasat (1991, p.192) redefined true advantage as "the degree to which using the innovation is 'perceived' as being better than using its precursor". The environment of the innovation largely determines what precise kind of relative advantage (such as economic, social or the like) is important to potential users; however, the characteristics of the prospective users would influence which aspects of relative advantage is imperative to them too. (Rogers 1995; Agarwal&Prasad, 1998; Howard, 1999).

Some researchers, including Rogers (1995) consider "image" as a feature of relative advantage. Image is defined as "the degree to which use of innovation is perceived to enhance one's image or status in one's social system" (Moore &Benbasat, 1991, p.192). Rogers (1995) states that "the prime motivation for many individuals to adopt an

innovation is the desire to gain social status". Since in many innovation adoption studies, the relative advantages of an innovation are considered as one of the best predictors of adoption behavior, this research attempts at confirming that the perceived advantages are important innovation characteristics in the context of Libyan higher learning institutions (Rogers, 1995).

Premkumar and Roberts (1999) studied the factors that affect technologies adoption in small businesses situated in rural communications in the USA. Some of these factors were relative advantage, support of top management, size of organisations, external stress, and competitive stress. A questionnaire instrument was developed to measure these variables since it has an advantage over other methods to encompass the tests of reliability of various constructs measurements. The findings showed that support of top management, size of organisations, relative advantage, external stress, and competitive stress, are important determinants of the adoption (Premkumar &Roberts, 1999).

More recent studies like those done by Boras (2004), Tung and Rieck (2005), Sparling and Toleman (2007), and Nord et al. (2007) confirm the effects of relative advantage on the diffusion of innovation.

The study of Brown et al. (2003) examined the factors that affect cell phone banking adoption in South Africa and found that the perceived relative advantage has an influence on the adoption of cell phones. Tung and Rieck (2005) examined the factors that influence electronic government services adoption among business organisations in Singapore. Analysing 128 questionnaires from various business organisations in Singapore, their study reported that there was a positive relationship between perceived benefits, external stress, and the adoption of electronic government services among business organisations in Singapore. Likewise, Nord et al. (2007) examined the factors influencing the e-commerce readiness to adopt in the Central Okanagan Region in Canada. The authors' proposed three influencing factors, namely computer support in

the organisation, relative advantage, and compatibility. The study found that computer support within organisation, relative advantage, and compatibility are significant factors in the adoption of E-commerce in the Central Okanagan Region of Canada. Boras (2004) reported that relative advantage is positively related to new technology adoption. Using the contingency model to examine the factors affecting Internet adoption in Singapore, Teo et al. (1997) surveyed 500 companies in Singapore and analysed 188 usable responses. Their findings revealed that technological and organisational factors rather than environmental factors play significant roles in the adoption of internet. It can be concluded that the literature supports that relative advantage can be made a basis of the proportional effectiveness in achieving a common objective. This conclusion has been persistent and consistent through literature, starting from Thornatzky and Klein (1982) who found that relative advantage was a vital factor in determining the new innovations adoption of, and ending with Ouda (2010).

The aforementioned studies support the innovation diffusion model developed by Rogers (1983) which has been discussed in Chapter Three. Rogers discussed the significance of relative advantage on the innovation diffusion at an organisational level. The diffusion contingency model for government accounting diffusions by Godfrey et al. (2001), defines relative advantage as an important component of the characteristics of innovation that affects the diffusion of innovation of government accounting reforms. In the Libyan context, the economic factors represented by relative advantage usefulness in overcoming the problem of line-item system influenced the level to which innovation is perceived as better than the preceding line-item budgeting system and improved the perceived social status of Libya, as it is trying to improve its image to the international community and investors through the reform process. Regarding this issue, Godfrey et al. (2001, p.286) asserts that "Economic factors drive many innovations, including accounting system change. In this context it may be that a country's social

status will be an important trigger driving change, particularly at the *agenda-setting* and *matching* stages." Rogers states that action by many countries world-wide looking to change their government accounting systems to an accrual (commercial) accounting basis at times can be explained by the perceived (higher) social status that comes with doing so. This desire for a higher status can bring about inappropriate change for some of these countries, inevitably causing obvious difficulties in dealing with the current accounting systems they own. For they are now likely to have a shortage of employees with the technical skills and experience in their administrative workers (weak administrative structural variables/low organisational complexity).

For the above reasons and arguments, the first research hypothesis is stated in the following manner (stated in the alternative manner):

Hypothesis 1: Relative advantage is positively associated with the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus.

4.2.1.2 Organisational Supports (OS) and the Readiness to Adopt PBBS

Management and organizational researchers working from a variety of perspectives have discovered that employees in an organization are affected by how they perceive their organization supports innovation, creativity, trying out new things, risk-taking, practices associated with total Quality Management, and training (Swieringa & Wierdsma, 1992; Campion et al, 1993; Scott & Bruce, 1994; Rynes & Rosen, 1995; Brandyberry et al. 1999; Howard, 1999; Watkins, 2000). Drawing from this literature, both top management support and resources support are included in this study to capture the individual's perception of organizational support.

Prior research indicates that top management support has an effect on the transfer of training into everyday work during the adoption stage. The literature also stated that a reciprocal relationship develops between an individual in an organization and a

perceived personification of the organization, and that the individual in an organization develops beliefs concerning the extent to which the organization values their contributions and cares about their wellbeing. These beliefs should affect individual behaviour in numerous ways, including increasing effort toward goals, increasing pro-socially acts, and developing trust, innovation, problem solving, diligence, and performance. Prior evidence shows that leaders who are supportive of their subordinates influence the subordinate's innovativeness (Buchholtz &Ribbens, 1994; Gagnon &Toulouse, 1996; Greengard, 1998; Howard, 1999; Young et al.2001; Ezigozie, 2001). A similar concept was articulated by Campion et al. (1993) and Scott and Bruce (1994) in their studies of Research and Development employees. They found that top managerial support was positively related to individual innovative behaviour, but resource supply was not. While Guzzo and Shea (1987) noted that visible resource allocation can be seen as upper management support of organization change. Numerous studies have been conducted on Organizational support and reported that senior management support plays a significant role in technological innovation. (Lertwongsatien & Wongpinunwatana, 2003; Tsao, Lin, & Lin 2004; Grover & Goslar, 1993).

Top management plays an important role in relation to the availability of these resources. "The commitment and support of top management has emerged in the literature as a key factor evident in an ABC adoption (Brown, Booth, & Giacobbe, 2004; Clarke & Mullins, 2001; Cotton et al., 2003; Diekmann & Kocakulah, 2001; Kiani & Sangaladji, 2003; Krumwiede, 1997). This top management support is argued to be critical due to the ability of managers to focus resources into the adoption process and to help motivate those who are resistant to the operation of the system (Shields, 1995).

Premkumar and Roberts (1999) examined the factors that influenced the adoption of technologies in small businesses located in rural communications in the US. The authors tested the effects of relative advantage, top management support, organizational size, external pressure, and competitive pressure. The findings showed that relative advantage, top management support, organizational size, external pressure, and competitive pressure are important determinants of the adoption.

Seyal, Noah and Yussof (2005) examined and explored quantitatively the determining factors that contribute electronic data interchange (EDI) adoption among Brunei's small and medium enterprises (SMEs). Fifty questionnaires received were analyzed and the findings showed that perceived relative advantage, management support, and government support are significant factors affecting (EDI) adoption.

Thompson, Tan and Buk, (1997) conducted a study on the internet adoption in Singapore. Their study uses a contingency model to examine factors affecting internet adoption. A questionnaire was used to survey 500 companies in Singapore and 188 usable responses were received. The results revealed that organizational and technological factors, rather than environmental factors, played an important role in internet adoption.

Lertwongstien and Wongpinunwatana (2003) examined the factors influencing e-commerce adoption in Thailand in small and medium enterprises (SMEs).Factors such as top management support, perceived of benefits perceived compatibility industry competitiveness and size were examined. Data was collected through a national survey. The findings showed that there was significance relationship between management support, perceived of benefits and the adoption of e-commerce.

This position, however, may be threatened by the management's incentive to maximize their own wealth. Recent evidences suggest that if managers perceive ABC to impair

their bonuses and compensation achievements, the organizational support is not likely to be strong" (Fennema, Rich, & Krumwiede, 2005).

It can be concluded from the above empirical evidence that Organizational support encourages the diffusion of innovation in anorganisation. The above studies draw on the Organizational theory and deal with the issue on an organizational basis and from an organizational perspective. This study deals with the issue from the macro level that is concerned with the reform level of the Libyan budgeting system using higher education institutions as a start off. So government support can be seen from two perspectives, micro or organizational level and macro or reform level. Godfrey et al. (2001) defined the Diffusion-Contingency Model for Government Accounting Diffusions as an organisational support of a significant component of the organizational structural characteristics that affects the diffusion of innovation of government accounting reforms. Organizational support (top management support) can be defined as the attitude of top management towards change as discussed in the Diffusion- Contingency Model for Government Accounting Diffusions (Godfrey et al., 2001). In the Libyan context the attitude towards change in the political leadership is positive as the need for reform has been repeatedly stressed in several occasions. The issue has also been supported by the civil society of the country as reported by civil reform activists in the country (AMF, 2010). This issue has been discussed closely by Godfrey (2001, p.283) as follows:

"Attitude towards change is somewhat self-explanatory in terms of both the leader(s) and the organization. Clearly, if attitude towards change is positive then organizational innovativeness will tend to be high. Interestingly, there may be barriers to change if the leader(s) and the organization display opposite attitudes. In other words, the leader(s) may be positive towards change but the organization, if negative, may stifle such innovative zeal, and vice versa. In underdeveloped and transition economies, political

leaders may, for sound economic reasons, feel under pressure to agree to innovations suggested (or promoted) by international agencies such as the IMF and the World Bank. However, the successful implementation of such innovations may be more dependent upon the attitude to change of the government organization itself".

For the above reasons and arguments, I state the second hypothesis as follows (stated in alternative form):

Hypothesis 2: Organizational support is positively associated with the adoption of PBBS in Libyan Higher Education Institutions, ceteris paribus.

4.2.1.3 Satisfaction with Line-item (SL) and the Readiness to Adopt PBBS

The line-item budget is "a financial plan of estimated expenditure expressed in terms of the kinds and quantities of objects to be purchased and the estimated revenues needed to finance them during a specified period, usually one year" (Babunakis, 1976, p.8). Oliver (1999) defined satisfaction in general as, the perception of an enjoyable achievement of a service. The satisfaction with Line-Item refers to the opinion of users as to whether it is pleasing and comfortable.

As far as enthusiasm to transform is concerned, the level of satisfaction with the existing systems plays an important role in adopting the system (Chau &Tam, 1997). Innovation of organisation occurs in phases, where issues are first recognised and then solutions are compared and evaluated (Rogers, 1983; Tornatzky &Fleischer, 1990). A low level of satisfaction with existing systems, usually referred to as a gap of performance, will be an impetus to finding new ways to get better performance (Rogers, 1983).

Swenson (1995) conducted a study that investigated certain factors that affect the adoption of Activity Based Costing (ABC, Reference and definition in Chapter 2).The factors investigated were relative advantage, strategy, firm's complexity, top management support, and satisfaction with the current costing system. Swenson's aim

was to determine whether a firm experienced a rise in satisfaction when shifting and transforming from traditional costing to Activity Based Costing (ABC). The researcher found that the satisfaction with costing among companies which adopted ABC will be higher than companies or firms that have yet to adopt ABC.

Prior studies on adoption tend to test the satisfaction with the new system. However, as the users or institutions selected for this research have not adopted the new system, namely Performance-Based Budgeting System, this study takes a different approach by examining the satisfaction with the current adopted system. Therefore, it is expected that there will be a negative relationship between favoring the willingness of adopting the new system and the satisfaction with the current system (Line-Item).

The studies above discussed the satisfaction with the current system from an organisational perspective. Similarly, the diffusion-contingency model for government accounting diffusion considers the satisfaction with current system as a reverse variable for the relative advantage and compatibility of the new system. In the Libyan context, the satisfaction with Line-Item Budgeting System (or the old system) is basically reflecting whether it is responding to the need of the potential users (compatibility). This issue was discussed by Godfrey et al. (2001p.283) and they stated that "innovation is perceived as specific improvement to the existing system.

For the reasons and arguments discussed above, the third hypothesis of the research is stated as follows (stated in alternative form):

Hypothesis 3: Satisfaction with Line-Item Budgeting System is negatively associated with the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus.

4.2.1.4 Perceptions of Barriers (BA) and the Readiness to Adopt PBBS

The literature concerning the barriers to adoption are documented mainly in IT and e-government fields. However, since the introduction of any new idea or system faces internal and external barriers, a generalisation with modification of these barriers can

apply to any adoption study. Bonham et al. (2001), Bourn (2002), and Dillon and Pelgrin (2002) among others, argued that the lack of technical infrastructure is considered as barriers to the development of the ability of government organisations to offer online services. Since PBBS requires a well-developed technical infrastructure and well-trained staff in order to monitor and evaluate the budgeting system of government organisations, it is expected that a lack of technical infrastructure is one of the barriers.

Additionally, there exist two organisational barriers that are related to the structure of the organisation, namely its management strategy and organisational culture. The structural organisational barrier can be related to the lack of proper communication and relationships among the respective departments. In other words, if the departments that were responsible for setting, preparing, monitoring and evaluating budgets have a poor or lack of proper communication, this might cause PBBS to fail in achieving its goals (Aichholzer &Schmutzer, 2000; Fletcher &Wright, 1995; Lenk &Traunmuller, 2000).

Similarly, Al Sabbah and Molla (2004) found a negative relationship between the barriers and the adoption of internet banking using the case of organisations in the Sultanate of Oman.

Adler et al. (2000) examined the extent to which manufacturers of New Zealand utilised advanced accounting techniques, the trends in adoption, as well as perceived adoption barriers. Their findings showed that the most serious barriers to adoption of new accounting techniques were limitations in a firm's human resources, such as the lack of relevant skills at reasonable cost.

Fletcher and Wright (1995) conducted a study on the perceived barriers concerning the adoption of database marketing (DBM) in the United Kingdom's financial sector. The study's sample consisted of 46% of the most important banks, building societies, and insurance firms in the UK. The study's findings showed that organisational and strategic

barriers were deemed as less significant than technical barriers for both adopting and non-adopting organisations.

Management strategy, business process, and organisational culture can act as organisational barriers. This can be explained by the fact that the management of some government agencies and institutions felt threatened by any new system. This is because new systems might undermine the authority of the management of governmental organisations and institutions. Therefore, PBBS, which is a new system, is perceived as a threat to the top management and leadership when it is to be implemented. Hence, these factors are causing leadership or management to be a barrier.

In terms of the government organisation business process, respective staff must be well prepared for a new system such as PBBS. The current system mostly depends on lump sum money given to certain institutions, departments or divisions without any follow up, by using paper transactions to release or collect funds, with minimal or lack of monitoring process or evaluation of goals. However, PBBS allows the setting up of goals, preparation of specific funds for the goals, monitoring their processes, evaluating the outcomes and providing feedback on the respective entity to re-examine the input and output. Such a change in business process requires a well-trained staff for the adoption to succeed.

Organisational culture is another barrier that must be considered. This is related to the sharing of resources between and among departments. There might be a considerable reluctance to this kind of sharing, as some departments, institutions, and organisations consider sharing of information as a threat to their power. In other words, the ownership and control of business information are considered to be related to power, and sharing might weaken their control of what they have.

In addition to that, the scale of change in the budgeting system of a government organisation is very large, given to the fact that Libya has a centralised government system. Heeks (2002) argued that the main financial resource for any governmental institution comes directly from the central government, which is dependent on the annual fiscal budget allocation. Since the government tries to maximize welfare, the plan of introducing a new system like PBBS will be negatively affected by the centralisation of financial resources. Hence, it is expected that central government funding is one of the barriers.

For the above reasons and arguments, the fourth research hypothesis is presented as follows (stated in alternative form):

Hypothesis 4: Barriers are negatively associated with the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus.

4.2.1.5 Tolerance for Ambiguity (TFA) and the Readiness to Adopt PBBS

Furnham and Ribchester (1995) define tolerance as the way an individual (or group) "perceives and processes information about ambiguous situations or stimuli when confronted by an array of unfamiliar, complex or incongruent clues" (p.176). Researchers in psychology first described Tolerance for Ambiguity or TFA over 50 years ago, as an "emotional and perceptual personality variable" (Frenkel-Brunswik, 1949, p.110). In 1958, cited in MacDonald (1970), looked into tolerance for ambiguity where it was defined as "a readiness to agree to a state of affair capable of alternative interpretations, or of alternative outcomes, e.g. emotion comfortable (or at least not feeling uncomfortable)" (p.795). Individuals with low tolerance for ambiguity usually reduce any problem they face to mere black and white; therefore, individuals who are confronted with two opposing issues might look for an easy way out to any problem. Consequently, numerous studies have examined ambiguity tolerance as a personality trait (DeRoma et al., 2003; Johanson, 2000; McLain, 1993; Norton, 1975; MacDonald,

1970) in effort to raise the understanding of how an individual perceives, interpret and react to ambiguous situations.

In the accounting domain, tolerance for ambiguity has been studied, particularly in the context of work-related issues affecting auditors and financial professionals. In a study done on government auditors, Gupta and Fogarty(1993) found that tolerance for ambiguity affects the auditors' preferences for more or less supervision and also whether to use standard operating procedures or not. Similarly, on a study involving loan officers, Wright and Davidson (2000) found that a final loan decision is affected by an individual officer's tolerance for ambiguity rather than the trustworthiness of a financial statement. MacDonald (1970) found a significant positive relationship between ambiguity tolerance and performance on an anagram task.

Tolerance for ambiguity (TFA) captures an individual's attitude towards information received in and from uncertain situations (Hartmann, 2005). An individual's TFA affects behavioural response to task and environmental uncertainty (McGhee, Shields & Birnberg 1978; Faircloth & Ricchiute, 1981; Gul 1986; Lal &Hassel, 1998). Hartmann (2005) also argued that the expected behavioural responses will be less in individuals with high TFA.

Cox (1994) noted that "a person who is intolerant of ambiguity perceives ambiguous situations as threatening, whereas a person who is tolerant of ambiguity does not experience ambiguous situations as threatening and may even view them as desirable" (p. 65). This indicates that a more tolerant person is likely to view and consider new situations, systems and approaches as non-threatening and vice versa. Lamberton (2005) asserts that in the accounting field, a high level of tolerance is not advisable as there are jobs that are applicable to individuals with lower levels of tolerance. This is due to the fact that individuals who are attracted to ambiguity (high tolerance) are usually risk

takers, which is not an advisable characteristic for the accounting profession. Therefore, more conservative jobs in the accounting profession might be focused on lower ambiguity, while other jobs that require a high level of creativity are assigned to individuals who exhibit high ambiguity tolerance. Vishwanath (2005) argued that innovators need to have a high level of tolerance for ambiguity and have a willingness to learn and understand new innovations or changes.

The use of questionnaires has been shown to have higher advantages over other methods. Several studies on adoption of new technologies have utilised the questionnaire method due to its ability to tests various constructs measurements, which includes the following.

Hartmann (2005) examined how assignment uncertainty, environmental uncertainty and tolerance for ambiguity (TFA) influence managerial opinions about the appropriateness of accounting performance measures (APM). A total of 250 surveys were distributed to employees from 11 organisations. The findings showed that the two types of uncertainty (task and environmental uncertainties) have an opposite influence on the manager's opinion about the appropriateness of APM, and that these effects observed are moderated by TFA. There was no direct influence of TFA seen on the appropriateness of APM in the study.

Lamberton and Fedorwicz (2005) looked into the influence of tolerance on ambiguity, gender on interest and computer anxiety on obtaining IT competency between 123 accounts as well as Accounting Information System (AIS). The findings suggest that accountants with a strong interest in IT are more comfortable with dealing with ill-defined, ambiguity problem-solving situations.

Sherril (2011) also examined the tolerance for ambiguity where the researcher studied students on the implications for management potential at six medical schools offering dual-degree (MD/MBS) programmes. The researcher distributed the questionnaire to 87 students. The results showed that MD/MBA students reported a higher level of tolerance of ambiguity than traditional medical students.

Also looking into medical students, McLain (1993) conducted a study that examined the influence of tolerance of ambiguity on medical students' career choices. The study indicated that tolerance for ambiguity affects the career choice and career performance of medical students.

While it can be seen that Dermer (1973) investigated the relationship between the tolerance for ambiguity (TFA) and managers' perceptions of the importance of information to job performance. The questionnaire was sent to 44 managers to be filled out. The researcher found that TFA has an impact on the managers' information preference and individuals with TFA accepted accounting information and used it more readily than individuals with low TFA.

Since adopting a new system will require learning and understanding new ideas and methods, it is hypothesised that the relationship between tolerance for ambiguity and the level of adoption of PBBS is positive in the Libyan higher learning institutions. In this study, the researcher predicts that the higher tolerance for ambiguity, the higher the attitude towards change and the higher the readiness to adopt PBBS. In this case, and according to the arguments above, it is expected that TFA will be positively associated with the readiness to adopt PBBS.

The above arguments discuss the effects of TFA on the readiness to adopt PBBS on the organisational level, i.e. TFA users within Libyan higher education institutions. The issue is also considered with the readiness to adopt PBBS from a macro level or from

the perspective of total budget reform in Libya. Therefore, from the reform perspective, this is analysed within the overall outlook of the diffusion-contingency model for government accounting diffusions (Godfrey et al., 2001). TFA can be connected to the overall attitude towards change as one of the organisations structural characteristics. Drawn from these points, it can be argued that higher TFA is associated with accepting the reform.

For the above reasons and arguments, the research has formulated the fifth hypothesis as follows (stated in alternative form):

Hypothesis 5: Tolerance for ambiguity is positively associated with the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus

4.2.1.6 Training (TR) and the Readiness to Adopt PBBS

Many researches has defined training and learning as the systematic acquisition of attitudes, concepts, knowledge, rules or skills process training that results in improved performance at work (Rothwell et al., 2012). Literature has also discussed how individual technology learning leads one to examine the training process associated with new technology adoption and implementation (Kirkpatrik, 1994; Marsick & Neaman, 1996; Kerla, 1997; Greengard, 1998; Koehle, 2000; Berry, 2000; Matey, 2002). In organisations, training can either be on-site or off-site, in training centres, on the job or in the classroom or seminars. Many researchers have suggested that the technological changes being implemented in organisations call for different strategies (Druckman & Bjork, 1994; Kerla, 1997; Levin & Rosse, 1998; Greengrad, 1998).

Drawing from work on social literature, it would suggest that the characteristics of the person doing the training might be an influence on the individual's technology learning. It has been shown in prior research that people tend to observe and model themselves on others whom they see as competent, and with whom they feel they have an affinity to (because of similar characteristics) (Cross, 2012). Researchers also have shown that

similarity is strongly related to how attracted people are to each other (Cross, 2012). Similarities between the trainer and the trainee should translate into the trainee paying more attention to the trainer. Also, people attend more to trainers, who are dynamic, appear interested and motivated about the training (Bandurs, 1986; Robinson, 2002; Marsick & Neaman, 1996; Greengard, 1988; Matey, 2002).

Mohasin (2005) conducted a study on evaluating the institutional capacity for implementing programme and performance budgeting in Civil Service apparatus in the Republic of Yemen on the programme performance budgeting. The researcher examined some factors influencing the programme performance budgeting, such as the requirement of the budgeting system, institutional performance standard, human capability, technical capability, appropriate legislation, organisational capability and training (Mohasin, 2005). The findings showed that there was a positive relationship between training and the implementation of PBBS in Yemen.

In this research, a distinction will be made between formal training experience and information training. A formal training experience is one that is systematically planned relating to the work environment, and emphasizes on practical skills and job competencies. Informal learning is a process of developing knowledge, skills and abilities beyond that of formal training experience (Fleishman & Mumford, 1989; Brinkerhoff & Montesino, 1995; Caudron, 1997).

For this study, training is defined as a formal programme or session with the designated trainer providing specific training to individuals who will be the users of the newly implemented technology. Within formal training sessions, training factors that might affect the individual learning process can be identified as the quality and quantity of information provided during the formal training sessions (Leonard-Barton & Deschamps, 1998; Druckman & Bjork, 1994; Greengard, 1998).

The diffusion-contingency model for government accounting diffusions (Godfrey et al., 2001) defines specific training as one of the organisation structural characteristics that are significant for the diffusion of innovation in government accounting. They name training and staff expertise as "complexity (Godfrey et al., 2001). In this regard Godfrey et al (2001). States the following:

"Complexity (the degree to which an organisational members possess a relatively high level of knowledge and expertise) is similar to the administrative structural variable of the contingency model. The organisation members' range of occupational expertise and professionalism as expressed by formal training usually measure the level of complexity".

Godfrey et al. (2001) continues to argue that the significance of staff expertise on the diffusion of innovation which states the following:

"High level of complexity will have a positive effect on the innovativeness of the organisation, as staff at all levels in the organisation will tend to seek ways of overcoming problems and improving processes and procedures. Also, they will, as part of their on-going professionalism, tend to scan the internal and external environment for potential innovations. In organisations exhibiting a low level of complexity, the initiation and more particularly, the implementation of innovation will be much more difficult".

For the above reasons and arguments, the research proposes its sixth hypothesis as follows (stated in alternative form):

Hypothesis 6: Training is positively associated with the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus

4.2.1.7 Attitudes Towards Change (ATA) Moderating Effects

Attitudes can be hard to change once they have been acquired (Dunham et al., 1984). This is because there is a possibility that resistance and struggle to change from inside

can occur. Dawson (1994) also mentioned that confrontation to organisational change could result from one or a mixture of factors like a substantive change in work, decrease in economic safety, psychological intimidation, and trouble of social arrangement and also lowering of status. However, it cannot be denied that the attitude towards change of an individual could be different at times. Some people are more resistant to change while others are more open to change. Dunham et al. (1989) stated that there are three types of attitudes towards change: affective, cognitive and behavioural. The affective part consists of the feelings a person has towards an attitude object that involves assessment and feeling, and it is often expressed as like or dislike for the attitude object (Hoyer et al., 2008). The cognitive component of an attitude consists of the information a person possesses about a person or a thing, which is based on what an individual or person believes is true (Jones, 2010). The behavioural tendency concerns the approach a person intends to exhibit towards an attitude object (Hoyer et al., 2008).

Among the three kinds of attitudes suggested by Dunham et al. (1984; 1989), the affective, cognitive and behavioural attitudes towards change – one issue arises: Which one of the three kinds of attitudes is crucial for an individual and for organisational change?

Organisational change ought to begin by adopting the cognitive or affective type and then followed by the behavioural type (Jones, 2010). Therefore, one of the key obstacles of change is the "fear of the unknown" or "unfamiliar situation", whereby the cognitive mode is a more effective mode that should be addressed first (Dunham et al., 1989).This is because once a person has information and knowledge of the likely changes to be made, his or her feelings towards change will possibly be changed to favour such changes. It is also important to acknowledge that conducting the cognitive component on attitudes towards change may be a challenging task if the information is not communicated well (Rashid et al., 2004). Individuals are more inclined to choose a

situation or a system that provides advantages and benefits rather than a system that does otherwise. If a new system provides advantages that are relatively higher than the other, or the current system, this will encourage the institutions to adopt the new system. Lam et al. (2007) conducted a study to investigate the influence of information technology (IT) beliefs, perceived task-technology fit, attitude, efficacy and subjective norm on the behavioural intention of adopting information technology in hotels in Hangzhu, China. The researchers distributed questionnaires to 458 respondents. The findings showed that attitude, self-efficacy and subjective norm were positively related to the behavioural intention of adopting technology of information in hotels in Hangzhu, China (Lam et al., 2007).

It can be deduced from the above discussion, that the relationship between attitude towards change and the adoption of a new system is positive. There exists a moderating effect of attitude towards change between relative advantage and the readiness to adopt PBBS. It is therefore hypothesised that the more advantage a new system has or the higher the relative advantage of the new system, the higher the chances of one's organisation accepting it. Similarly, if an individual perceives a new system to provide higher relative advantage than the current system, accompanied by a positive attitude towards change, there is a higher chance of that individual to adopt the new system.

Accordingly, there exists a moderating effect of attitude towards change between tolerance for ambiguity and the readiness to adopt PBBS. If an individual tolerates an ambiguous system, it will help in the implementation of the new systems. Therefore, the hypothesised relationship between tolerance for ambiguity and the adoption of the new system is positive. However, if tolerance is accompanied by a positive attitude towards change, this subsequently strengthens the chances of the adoption of the new system. Hence, the following hypotheses are derived which are the seventh and eighth hypotheses are as follows (stated in alternative forms):

Hypothesis 7: Attitude towards change moderates the relationship between relative advantage and the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus.

Hypothesis 8: Attitudes towards change moderates the relationship between tolerance for ambiguity and the readiness to adopt PBBS in Libyan higher learning institutions, ceteris paribus.

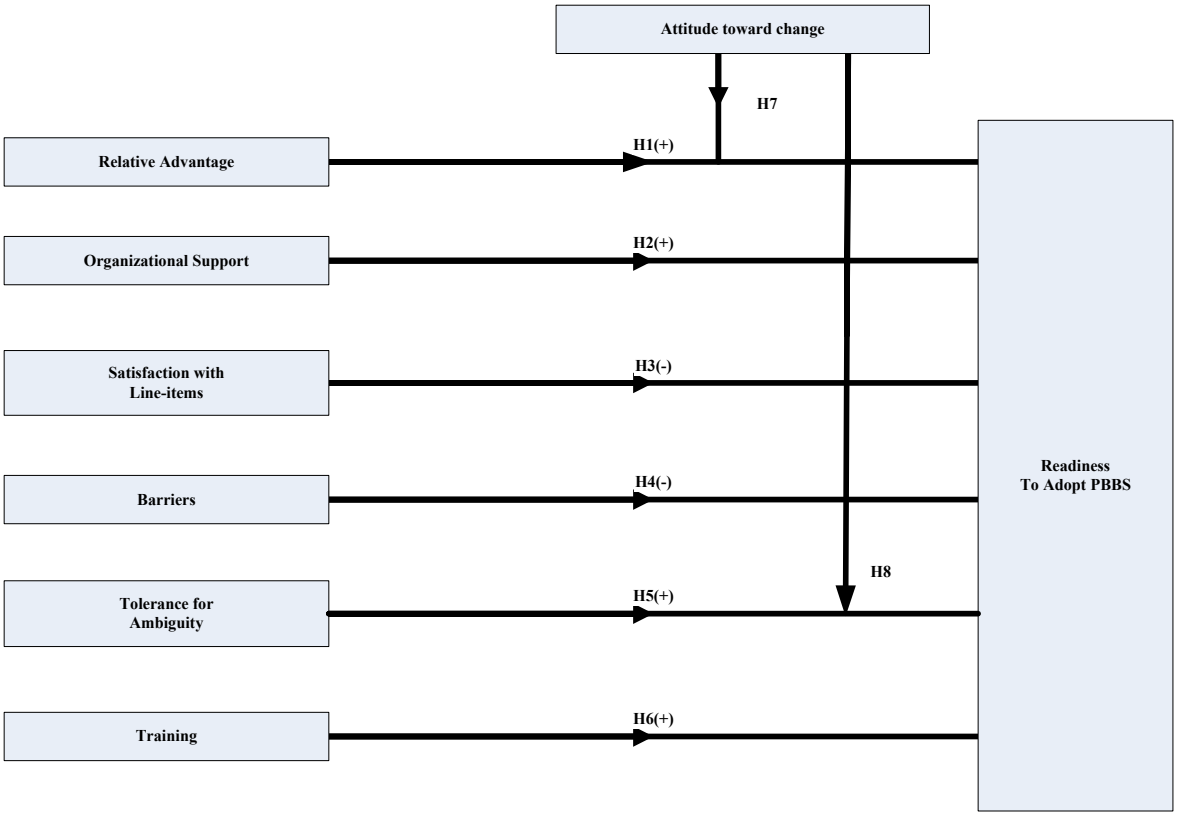

Figure 4-1: Research Framework Showing the Corresponding Hypotheses

4.3 Model Specifications

In order to examine the relationship between the readiness to adopt PBBS and the independent and moderate variables, three multivariate models are tested in this study. The discussion and justifications of the models are discussed in detail in the multivariate analysis results in Chapter Five. The framework in **Figure 4-1** shows a setup that may be represented by a number of equations, in addition to the individual links considered in the previous section. The first equation (Model 1) presents the relationships between six

independent variables with the dependent variable. In the second, iteration, the moderator is included (Model 2). In the third setup, the interactions of the moderator with the independent variables that have been posited to be moderated by the moderator are included (Model 3). The regression analysis results corresponding to Models 1, 2 and 3 are presented in Chapter Five.

The equation for Model 1 is as follows:

Model 1: Multivariate model

Model 2: Including the moderating variables with the set of independent variables

Model 3: Testing the moderating variables

Model 3 is estimated in four different stages. The reason behind the four estimations is to avoid the multicollinearity trap that might occur when including the attitudes towards change, relative advantage and tolerance for ambiguity as independent variables as well as moderating variables. Therefore, the first estimation will not include the moderating effect of attitude towards change with both relative advantage and tolerance for ambiguity. The second estimation will not include relative advantage and attitudes towards change as independent variables. The third estimation will not include the tolerance for ambiguity and attitudes towards change as independent variables. The last model will not include attitudes towards change, tolerance for ambiguity and relative advantage as independent variables, but will include the moderating effect of attitude towards change with both relative advantage and tolerance for ambiguity.

4.4 Measurement of Variables (independent, dependent and moderating)

The measures were developed by adapting existing measures found in the reviewed literature to the research context or by using the established theoretical constructs. The following discussion provides elaborate explanations on the measures of the model

variables. Each measure is described, many prior uses in organisational research are identified, and reliability from previous work (if available) is presented.

4.4.1 Independent Variables

In the following paragraphs, the input or independent variables will be presented and discussed, respectively. These are: a) relative advantage; b) organisational support; c) satisfaction with Line-Item system; d) perception of barriers to the readiness to adopt PBBS; e) tolerance for ambiguity and f) training.

4.4.1.1 Relative Advantage (9 items)

Relative advantage is the "degree to which an innovation is perceived as better than its precursor" (Rogers, 1995). In other words, the greater an innovation's advantage relative to available alternatives, the more likely it is that the innovation will be accepted (Robey & Zmud, 1992). Moore and Benbasat (1991) redefine true advantage as the extent to which the use of the newly introduced system or idea is perceived to be more beneficial than the current system. The environment of the innovation largely determines what precise type of relative advantage (economic, social and temporal) is important to potential users even though the characteristics of the possible users also influence which aspects of relative advantage are more significant.

Some researchers, including Rogers (1995) consider "image" as a feature of relative advantage. Image is defined as "the degree to which use of an innovation is perceived to enhance one's image or status in one's social system" (Moore & Benbasat, 1991). Rogers (1995) stated that "one motivation for many individuals to adopt an innovation is the desire to gain social status" (p. 213). Therefore a 5-point Likert scale ranging from strongly disagree = 1 to strongly agree = 5 was used to measure this variable.

4.4.1.2 Organisational Support (top management and resources) (8 items)

Support of top management refers to the degree to which efforts are promoted by top corporate management of the organisations. The importance of support of top management of new technology implementation is broadly accepted in the literature. Researchers from a diversity of disciplines have noted that employees in organisations are affected by how they receive the organisations support innovation, creativity, risk-taking and trying out innovative things (Porras & Robertson, 1992).

The general perceptions of managerial support, employees notice where resources are being funnelled in organisations, and view this action by the top management as a visible sign of organisational support to capture the individual's perception of organisational support for technological learning. Resources consist of financial and other resources support which has a strong practical and symbolic importance to the users of the new budgeting system. It is practically important because resources support ensures that adequate tools and other materials, as well as technical help when needed, will be available to facilitate learning (Rynes & Rosen, 1995). A Likert-scale with 1 – strongly disagree to 5 = strongly agree was used. A higher score indicates the perception of greater organisational resources support. In a study on work group effectiveness, Campion et al. (1993) discussed managerial support in terms of the allocation resources and cultural support. In the study, management support refers to the individual's perceptions that his or her upper management is familiar with, supportive of, and encourages the adoption and implementation of the new budgeting system.

Managerial support can be signalled to individual members of the organisation by the managers of the organisation by the managers being visibly interested in the new budgeting system adoption and implementation, by issuing memos and other documents addressing the adoption and implementation process, and by personal interaction with each individual. The items used in this study were generated from Campion et al. (1993)

to reflect managerial support specific to new technology. A Likert-scale with 1 = strongly disagree to 5 = strongly agree was used. A higher score indicated greater perceived organisational managerial support.

4.4.1.3 Satisfaction with Line-item System (10 items)

First, Babunakis (1976) stated that "the Line-Item budget is a financial plan of estimated expenditure expressed in terms of the kind and quantities of objects to be purchased and the estimated revenues needed to finance them during a specific period, usually one year" (p. 8). Oliver (1999) defined "satisfaction in general as the perception of a pleasurable fulfilment of a service". Some nominal scale items were adapted from Kluvers (1999) where the study generated a Likert-scale of 1 = strongly disagree to 5 = strongly agree. A higher score indicates greater perceived satisfaction with the existing system, Line-Item, while a lower score indicates less inclination to adopt and implement PBBS.

4.4.1.4 Perceived Barriers (8 items)

Luder (1992) mentions that the implementation barriers as environmental conditions that hinder the implementation process, thus hindering, and in extreme cases checking, the creation of a more informative accounting system which is in principle desirable. Barriers can be defined as a lack of resources and knowledge, the skill level of business operation, a lack of trust in the system and the lack of readiness (Gragg & King, 1993; Merthens, et al., 2001; Darch and Lucas, 2002; Duan, et al., 2002; Van Akkerton and Cavaye, 1999; Bode and Burn, 2002; Lewis & Cockrill, 2002). The items are intended to capture the barriers to the adoption and implementation of the new system, PBBS where some items were adopted from Burn and Robins (2003) and Heeks (2002). In particular, the cost of change related to people and time, and the lack of relevant skills were the top three barriers reported. A Likert-scale of 1 = strongly disagree to 5 =

strongly agree was used in the scale. A higher score indicates that the greater the perceived barriers, the lower the adoption and implementation of PBBS.

4.4.1.5 Tolerance for Ambiguity (9 items)

MacDonald (1970) defined tolerance for ambiguity as "readiness to agree to a state of affairs capable of alternative interpretations, or of alternative outcomes, e.g. emotion comfortable (or at least not feeling uncomfortable) when faced with a complex social issue in which opposed principles are intermingled" (p. 796). The items were adapted from Budner (1962) where a Likert-scale of 1 = strongly disagree to 5 = strongly agree was used. A higher score indicates that the greater the tolerance for ambiguity the higher the adoption and implementation of PBBS.

4.4.1.6 Training (3 items)

Training programmes and quality are used to mean a formal session of a designated trainer providing specific training to the individuals who are the users of the budgeting system to be implemented. Training programmes items are intended to capture the quality. This means training programmes for the preparation of employees capable of estimating revenues and expenditure and programme development in accordance with the requirements of the new system (Allwozi, 1999). The items were adapted from Jrissat (1995) which used a Likert-scale of 1 = strongly disagree to 5 = strongly agree. A higher score indicates greater training of employees and a higher inclination to adopt and implement PBBS.

4.4.2 Moderating Variable (23 items)

Attitude towards Change (ATC) is a moderating variable that has a strong contingent effect on the independent variable-dependent variable relationship (Cavana, et al., 2001). A moderating variable is defined as a variable that has no significant behavioural relationships with either the independent or dependent variable (Shields & Shields,

1998). Attitude towards Change is defined as "view attitude consisting of a person's cognitions about change, affective reactions to change and behavioural tendency toward change" (Dunham et al., 1989). In addition, attitude towards change is defined as "feelings and predispositions towards their jobs and employers in a budgetary context" (Milani, 1975). The attitude towards change was measured using an 18-item instrument (Dunham et al., 1989). This instrument comprises of three subscales: cognitive, affective and behavioural. Each subscale consists of six items. A five-point interval scale was used, ranging from 1 (strongly disagree) to 5 (strongly agree). Also in this study, some items were adopted from Subramaniam and Mia (2003) as well.

4.4.3 The Dependent Variables (9 items)

(Melkers & Willoughby, 1998, p.66). The items were adopted from Kluvers (1999) who used a nominal scale of yes and no. However, in this study, items were rated using an ordinal scale which was a Likert scale of 1 = strongly disagree to 5 = strongly agree.

Table 4-1: Relevant Reference for Research Constructs

CONSTRUCTS	REFERENCE	SECTION IN QUESTIONNAIRE
Independent Variables		
Relative advantage (RL)	Kluvers (1999), (Tayib & Rosli, 2003)	Change stale from nominal to Ordinal Section 2 :Q1-Q9
Organizational Support (OS)	(jarvenpaa & Lves, 1991)(Gagnon & Toulouse 1996) (1996; (S. Rynes & B. Rosen, 1995) ; (E. M. Rogers, 1995); (S. G. Scott & R. A. Bruce, 1994); (Campion et al., 1993)	Section 2 : Q1 – Q8
Satisfaction with Line-item (SL)	(Kluvers, 1999) New developed	Change stale from nominal to Ordinal Section: Q1- Q10
Perceived barriers (PB)	(Burn & Robins, 2003) and (Heeks, 2002b) three items. (Adler et al., 2000)	Section 2 : Q1 – Q9
Tolerance for Ambiguity (TA)	(Budner, 1962)	Section 2 : Q1 – Q9
Training (TR)	(Jrissat 1995).	Section 2 : Q1 – Q3
Moderating Variable (MV)		
Attitude towards change (ATC)	(Dunham et al., 1989)(Subramaniam & Mia, 2003).	Section 2 : Q1 – Q23
Dependent variable		
The Readiness to Adopt to PBBS	(Kluvers, 1999)	Section 2 : Q1 – Q9

Libya has been selected as the site for the case study because it possesses these characteristics which have been highlighted as gaps in the literature, with regards to PBBS studies.

a) Libya has recently reformed its economic management programme under the International Monetary Fund (IMF) (IMF, 2005) initiatives and support. In this instance, Libya is considered to have tried developed the accounting system, especially after the United Nations' sanctions on the country were lifted.
b) Libya was chosen as being the representative of the Arab countries because PBBS practices in Libya has not been evaluated and research related to Libyan case studies have been to-date inconclusive. There is a lack of literature on Libyan PBBS practices currently.

Meanwhile, higher learning institutions were chosen as targeted sample, also, due to the gaps indicated in the accounting knowledge sphere.

a) Higher learning institutions are public sector institutions. It is recognised that this sector was more organised and systematic in nature. A research on more established, organised and systematic organisations would assist in setting the benchmark for future adoption of new practices, knowledge and technical know-hows.
b) Furthermore, most of the higher learning institutions employees' are better educated than the rest of the public organisations. Better insight, experiences and expertise can be contributed by these institutions as far as the readiness to adopt PBBS is concerned.
c) In addition, the selection was also based on the similar nature and function of accounting systems adopted by Libyan higher learning institutions and the similarity of circumstances surrounding each Libyan higher learning institutions regardless of their geographical location. The magnitude of the activities of universities and the magnitude of the accounting regulations means that it attracts a large number of qualified accountants, who hold different accounting jobs, which allowed the researcher to access to a large community of accountants.

4.5 The Research Method

The multiple methods are a combination of both the quantitative and qualitative methods (Creswell & Clark 2007). In social studies, such as the area of administration and business including accounting, marketing, management, human resource management, organisational behaviour, economics and international business, research methods can be categorized into three types (Bryman 2004): quantitative, qualitative and multiple methods. The quantitative method is used widely to test, collect and measure data by employing statistical techniques. Qualitative research emphasizes

quality in data collection and data analysis through examining documents, observing behaviours, or interviewing participants (Creswell & Clark 2007).

Most of the preceding research in the government accounting reform area uses an experimental and case study research design (Christensen 2002; Godfrey, Devlin & Merrouche 1996; Luder 1992: Marwata & Alam 2006; Saleh 2007; Yamamoto 1999). Nevertheless, a number of studies also use survey method to examine factors influencing accounting change in the public sector (Baird 2007; Saleh & Pendlebury 2006; Tudor & Blidisel 2008; Venieris & Cohen 2004).

The importance of the mixed method, involving quantitative as well as qualitative research, is highly acknowledged in this research, as it is believed that both are important in understanding what is taking place in our environment. In this study, the use multiple methods quantitative and qualitative will be implemented with the use of both survey and interviews.

4.5.1 Quantitative Method

The suitable research method for this study is Mixed Method which is both quantitative and qualitative. Quantitative method is where self-administrative questionnaires are distributed to collect the data from the target population

4.5.1.1 Sample

The process of selecting a sufficient number of elements from the population is called the sampling process. The sampling selection should consider properties of the population to enhance the research's ability to generalise the result to the whole population (Sekaran, 2000; Babbie, 2001). Sampling is due to the difficulties in collecting data from a large size of population, this is due to the fact that it is operationally exhausting to manage and expensive in terms of time and effort. Whilst large samples may be possible to be selected, this would involve financial resources

beyond the realm of this self-funded research capability. Furthermore, it has also been argued that representative sampling, at its best, would better demonstrate the behaviours of the population it is representing, with the minimal amount of cost incurred. The sampling techniques are tools that help select relevant samples to the research problem. Sampling techniques can bring sample statistics close to population parameters. Parameters are the estimate of means, and the standard deviation of the samples and population.

4.5.1.2 Population

The population elements of the study are accountants, heads of financial departments and policy makers, who are involved in different managerial levels. The target population consists of users, accountants, financial officers, academics and non-academics from 15 public universities and higher learning institutions in Libya.

The questionnaire together with a cover letter explaining the purpose and objectives of the research was distributed to the sample respondents who are financial officers, accountants, academic and non-academic staff and those who are most likely to be aware of the accounting practices and techniques used namely executive academic officers and the heads of financial departments.

4.5.1.3 Sampling Techniques

Non-probability is defined as "judgmental sampling techniques is a form of convenience sampling in which the population elements are selected based on the judgment of the researcher" (Sekaran, 2000) and it is used to select the sample. Under this method, the sample was chosen to include different elements. The elements relates to the knowledge, experiences and expertise in the subject matter. The reason for choosing this sampling method was because it is the most appropriate and suitable for people to answer the questionnaire which includes those with a background in finance,

accounting and budgetary. Also, the sampling units were accessible, easy to measure and cooperative.

As in most social sciences and behavioural research, the lack of reliable valid measures is a source of concern. This is especially relevant since technology adoption and implementation research focuses on providing reliable and valid construct measurements (Sethi & King, 1991; Raj & Bajwa, 1997). However, this study is concerned with testing a theoretical model that has been formulated with a construct that is not directly observable. As an example, an individual's sense of how supportive his or her higher learning institutions' top management is will not directly be observable. An individual's sense of management support, however, can be inferred from a number of indicators, such as his or her scaled response to questions in the questionnaire.

The determination of the sample size of 700 was adopted from a method proposed by Yamanae (1986).

The calculation of the sample size at 95 percent confidence limit was based on the following formula:

$$n = \frac{N}{(e^2 N + 1)}$$

Where n = the sample size

N = the population size

e = 1.00 – confidence limit

Hence, for a population of N = 12,000 accountants and alike, and e = 0.05, n will be a value of 387.09. For the purpose of data collection this figure is rounded up to 388. The distribution of 700 questionnaire forms surpassed this requirement, hence, deemed as an appropriate number of samples.

4.5.1.4 Unit of Analysis

Survey research offers a method of studying almost researchable concepts (Babbie, 1998). Defining the unit of analysis or the unit about which the conclusions are being drawn is an important component of research design (Benbassat, 1987; Yin, 1994). The unit of analysis must be decided before selecting cases and must be adequate for answering the research questions (Babbie, 1998). The unit of analysis may be an individual, a group, an entire organisation, an event or phenomenon, or a specific project or decision (Darke et al., 1998).

In this study, the proposed theory testing, data collection and analysis were conducted at the individual level. This means that the unit of analysis is the respondents who were intercepted to provide their readiness of and perspective on readiness to adopt PBBS.

4.5.1.5 Questionnaires Method

The questionnaire is a 15-page self-administered questionnaire consisting of a total of 79 questions divided into two sections. Section (1) or (A) captures demographic or profiling information such as departments of the universities, age, gender, academic qualification, years of service, employment status, as well as previous PBBS experience and job title.

Section (2) or (B) contains the measures for relative advantage, organisational support and satisfaction with Line-Item system, perceived barriers, tolerance for ambiguity, training, attitude towards change, and the adoption of PBBS relevant questions. These questions are related directly to each of the respective essential constructs discussed in the literature review and depicted in the conceptual framework and the developed hypotheses. A sample of the questionnaire is in Appendix D (In English and translated into the Arabic language).

4.5.1.5.1 Instrument Translation Process

For the purpose of distribution to samples in the Libyan case study, the questionnaire which was originally prepared in English was translated into Arabic. The triangulation of the questionnaire translation was conducted again by an English native speaker with Arabic language proficiency who back-translated the questionnaire into English. The purpose is to ensure no loss of meaning and concepts were experienced during the first translation activity.

For this purpose and to ensure the Arabic version will correctly reflect the meaning and nuances of the original instrument, the researcher sought proficient bi-lingual translators. Two of the academic staff, both who are native Arabic speakers, who work at the Department of Accountancy, Faculty of Economics, Al-Fath University, provided the appropriate translation of the items in the original version of the questionnaire. One of them was interested in knowledge management issues and had graduated from an American university. The other one was interested in professional development and training programmes had graduated from the United Kingdom.

In the initial translation process, Arabic text for all English language words and phrases of the questionnaire were utilised. Each of the academicians worked independently took one week to complete the translation work, after that, each translation was then evaluated. Both academicians shared similar translations for majority of the items. Some items were reworded so they could be understood in the Libyan context. Thus some revisions were made to ensure a more comprehensible meaning.

In order to ensure the questionnaire is clear and understandable, back translation was conducted. First, the questionnaire was translated from English into Arabic. Then it was re-translated to confirm that the Arabic translation did not create unintended and distort from the intended meaning of the questionnaire. This time, the translation was carried

out by the department of English Language Department in Faculty of Education at Al-Fath University.

4.5.2 Data Collection Method

Several methods can be considered for collecting data in using survey types of research. The selection of data gathering method in survey research mainly depends on the accessibility of the samples, desired sample size, the research objectives and the budget (Vitalari & Venkatesh, 1991). The most commonly used data gathering method is self-administered questionnaire.

In this research primary data was collected using a survey questionnaire. In this study, mixed methods (quantitative and qualitative) comprised a self-administered questionnaire survey and interviews. The aim of the self-administered questionnaire was to gather data for the purpose of hypotheses testing; the study investigates the relationship between the following variables:

a) Prospective of the readiness to adopt PBBS and implementation;
b) Some identified factors that affect or influence the adoption, such as organisational support, satisfaction with the existing Line-Item system, barriers to implementation, tolerance for ambiguity, training and attitude towards change.

4.5.2.1 The Questionnaire

Questionnaires, usually defined as a list of carefully structured questions (Collis & Hussey, 2003). Self-administered questionnaires are one of the most commonly used methods for collecting data in research studies (Babbie, 1998; Bourque & Fiedler, 2003). In self-administered questionnaires, the respondents were provided with the questionnaire and are requested to fill them out on their own time and return them by mail, email or collected by the researcher. In this section, the rationale for choosing a self-administered questionnaire survey will be discussed as well as the targeted

respondents, the questionnaire design, pilot testing and the rationale for the questions are discussed.

"The survey method is one of the most common approaches used in the social sciences to empirically study the characteristics and interrelations of sociological and psychological variables" (Roberts, 1999, p. 56). Marshall (1982) refers to the survey method as an investigation where:

a) Logical measurements are made greater than a series of cases yielding a rectangle of data;
b) The variables in the combination are analysed to observe if they show any pattern;
c) The question matter is social.

In this study, the questionnaire survey method was selected in order to reach a greater number of universities and higher institutions. Furthermore, selected variables influence the prospective adoption of PBBS can be tested, each independent of the others.

The distribution was based on posting or mailing the self-administered questionnaire. The questionnaires were distributed to the respondents through mail with self-addressed stamps for ease of returning and collection of the completed forms. A cover or introduction letter was attached to clarify the purpose of the research and assure anonymity. Administration of collection and management of completed questionnaire was conducted by the researcher to ensure only valid and reliable responses were recorded in the questionnaire. Following the pilot testing, 700 forms were distributed based on the tabulated and stratified unit of analysis identified from the employees listed by the higher learning institutions. Of the 700 forms distributed only 500 were completed and returned. The number of analysed sample was still reasonable to provide a 95 present level of confidence in significance testing (Yamanae, 1986).

A follow-up strategy was conducted at least twice to ensure adequate responses and forms were returned for analysis purposes. First, a postcard reminding the respondents

that a questionnaire survey form has been distributed to them was sent via mail, after a month of the form being distributed. Second, the respondents have been telephoned to remind them of the need to complete and return the forms after three months being distributed.

4.5.2.2 Pilot Testing

Pilot testing is an important step in ensuring reliability and validity of the research instruments (Sekaran, 2000). The major function of the pilot study was to confirm that the questionnaire sufficiently addressed the relevant issues, such as whether it was easy to comprehend and that it was professionally compiled. The participants were requested to fill in the form and provide remarks or comments on how the questionnaire could be improved. A pilot version of the seventy questions was distributed by mail to account officers, financiers and non-professionals in seven Libyan public universities as well as other relevant experts. Thirteen questionnaire survey forms were returned and used for pilot testing. The forms were not included in the analysis of the comprehensive surveys. The first aim of this test was to ensure that the mechanics of compiling the questions were adequate. This was accomplished by having respondents, to first, complete the questionnaire and provide feedbacks on the length and wordings. The second aim of the test was to make an initial reliability assessment of the scales.

In general, respondents found the questionnaire to be clear, hence, the survey was deemed ready for data collection stage. Nevertheless, improvements on some constructs and their measurements have been made. At this stage, comparison between the pilot survey and the comprehensive survey have yet to be made due to variation and disparities in some scoring calculation and results between the two samples resulting from the variation in some constructs and their respective measures.

4.5.2.3 Reliability Test

The reliability of an instrument refers to its ability to produce consistent and stable measurements. Kumar (1996) explains that reliability can be seen from two perspectives: reliable (the extent of accuracy) and unreliable (the extent of inaccuracy). To test the reliability of the pilot study, the test employed internal consistency methods measured using the Cronbach's alpha

The reliability is expressed as a coefficient between 0 and 1.00. The higher the coefficient the more reliable is the test. The most common reliability coefficient is the Cronbach's alpha, in which internal consistency is estimated by determining how all the items being examined relate to all other items and to the overall test, i.e. internal coherence of data.

The results of the pilot study showed that the Cronbach alphas reliability coefficient for the target and goal level of minimum reliability ranged from 0.65 to 0.94. A measure should have a Cronbach alpha of at least 0.6 or 0.7 and, preferably closer to 0.9 to be considered useful (Aron & Aron, 2002; Sekaran, 2000).

4.5.2.4 Data Analysis

To ensure the testability of the study, systematic data analysis was stringently followed throughout the process of data analysis where the processes included coding and preparing data for analysis. The results of the collected data were presented based on the following tests: reliability, normality and exploratory factor analysis. First, descriptive analysis was carried out on the collected data, and later organised and summarised. Background information for sample characteristics was provided using the descriptive statistics technique. Background information consists of the profiles of the respondents, which also includes financial accountants and non-academic staff. These profiles highlighted the gender; type of university, specialisation, role, educational level, and department affiliated with and job status. Frequency distribution and percentages

provides an overview of the data collection. These were presented in the form of graphs and tables. A description of the results of the reliability and normality tests as well as the questionnaire validity would follow suit. Next, analysis of measures of central tendency using the mean score was deployed on questions number one and two. Since, in many cases, the variables were not normally distributed, the choice of the statistical tests used was dependent on the normality testing. For inferential and descriptive statistics, Statistical Package for Social Science (SPSS) was used.

The analysis will be further elaborated in the next chapter.

4.5.3 Qualitative Approach

Qualitative methods are a mixture of rational, serendipitous and intuitive in which the personal experiences of the organizational respondents are often the key events to be understood and analysed as data (Van Maanen, 1982; Fong, 1996). A significant part of the qualitative methodology is based on the assumption that it is possible to discover motives and meaning of other people through conversations with them. Qualitative data relates to the description of events, interview of top management decision makers and direct questions. Therefore, qualitative methods provide the researcher with meaningful insights by delving more deeply and examining the intangible aspects of complex issues of process. To gain further deeply through in more understanding on the relationships between the variables

4.5.3.1 Qualitative Data Analysis

Using qualitative methods, the research process moves from level to level of analytical abstraction in three broad steps:

a) The creation of texts and the categorization of the data therein,

b) The drawing out of themes and relationships between themes, and

c) The synthesis of those themes and supporting data into an explanatory framework.

The interviews were framed by the study's definitions and shaped by inviting key respondents to answer questions "about your experience, developing, learning and managing the implementation", and various follow-up prompts (Yin, 2003).

Semi-structured interviews were conducted in order to obtain further insights into the respondents, opinions on issues pertaining to budgeting system adoption in the institutions of higher learning. The interview provides a platform to gather information that could serve as a means to check and determine the validity of the responses from the questionnaire survey. In addition to that, the responses from the interviews could be used to gain a deeper understanding of the adoption of the new budgeting system. A highly structured interview is very similar to questionnaire questions. An unstructured interview is more open and flexible. Respondents are free to express their own views on the issues that are being addressed by the interviewer (Yin, 2003).

The advantages of using interviews include the ability to obtain higher quality information, as interviews provide opportunities for feedback and probing complex answers. It also enables the ability to gathering contextual information that is not readily obtainable through the use of survey instruments and higher rates of participation and questionnaire completion (Lillis, 1999; Zikmund, 2003).

However, there are many disadvantages associated with the interview method of inquiry. One major disadvantage is the interviewer might induce bias in the collection of qualitative data and the analysis of qualitative data is subjected to "potentially significant bias as it relies on interpretations and classifications imposed by the researcher" (Lillis, 1999).

A qualitative interview is used to probe significant results from the survey (quantitative results) by performing in-depth study of aspects of the readiness to adopt PBBS, to ascertain the reasons for the results of the survey. Also it aids the interpretation and confirms the results of the survey findings. The importance of the mixed methodology,

involving quantitative as well as qualitative research, is highly acknowledged in this research, as it is believed that both are important in understanding what is taking place in our environment.

4.5.3.2 Interviews

An interview are made to provide more detailed comments and is used to probe for significant results from the survey (quantitative results) by performing an in-depth study on the aspects of the readiness to adopt PBBS, to ascertain the reasons for the results of the survey. Semi-Structured and unstructured interviews were conducted with vice chancellors, executives, accountants, financiers, officers and other personnel at decision-making level which can give views with regards to the readiness to adopt PBBS and also on the budgeting systems practiced in the Libyan institutions of higher learning. The selected respondents were involved in the initial decision-making, planning and organizing activities as well as in the implementation process in their respective departments in the different institutions.

In this study, the chosen respondents were considered because of their expertise, experience and involvement either with the implementation of the current system of budgeting or expected to be involved with the introduction of the new budgeting system. The interviews focused specifically on describing the context surrounding the organization's decision to adopt a new budgeting system; organizational contextual factors (structure, task, personnel, and knowledge) that were seen to have an important influence on the decision making process that will determine formation and selection as well as the outcome of the organization's decisions to adopt the new system.

Interviews were conducted with middle and top level administrators responsible for the implementation of the current system organization-wide. The sampling method is described by Marshall and Rossman (1995) as "elite interviewing". They define elite interviewing as "a specialized case of interviewing that focuses on a particular type of

interviewee" (Marshall & Rossman, 1995). This does not imply any judgment as to their value or worth to the organization; the elite are individuals whom most people in the organization attribute the power and ability to influence decisions, whether it is deserved or not. The label of elite is in some ways similar to what DiMaggio (1988) calls the organizational entrepreneurs. They are those who control considerable resources within the organization.

The plan was to interview 25 participants considered as "elite". These individuals were identified by the researcher by studying the organizational set-up of the institutions of higher learning as well as through meetings attended by the researcher himself. The most vocal individuals and influential personalities involved in the management of these institutions would be approached for interviews. Figure 3-2 and Figure 3-3 display the qualitative sampling parameters of the respondents and the summary of the data sources used in this study.

4.5.3.2.1 Semi-structured Interviews

Semi-structured interviews were conducted to obtain a much deeper insight into respondents' opinions on issues pertaining to budgeting practices and views about changing to the new budgeting system in Libyan institutions of higher learning. The interviews provided information that could serve as a means to check and determine the validity of the responses from the questionnaire survey which represents the quantitative approach. Besides that, it gives the researcher the chance to ask the respondents about the strengths and weaknesses of the current line-item budgeting system.

The main objective of the semi-structured interview was to obtain in-depth information relating to the line-items budgetary system which is currently used in Libyan institutions of higher learning and the new budgeting system of PBBS. Eight universities as well as three government organizations that played an important role in decision making were chosen for interviews. The use of the semi-structured interview in

this study, in addition to the questionnaire survey was aimed to derive benefits of both qualitative and quantitative methods.

4.5.3.2.2 Design of the Interview Guide

The interview was designed to seek elaborate responses on the research questions. The interview guide contains a checklist of the topic or sub-topic to be covered in the interviews. According to Brenner (1985), an interview guide has two purposes: to avoid bias and to ensure appropriate reporting within the frame work of the study. Lillis (1999) described the purpose of an interview guide is to ensure "complete and consistent coverage in each interview of themes under study, as well as minimizing researcher intrusion through specification of neutral questions and probes" (p.84). This is to ensure control in terms of consistency and coverage of the issues under investigation during the interview and to reduce the effects of interviewer bias. Brenner (1985) suggests that the interview guide should be used flexibly to capture indirect responses from the respondents on the subjects in the study.

The interview guide was divided into three sections representing major themes, covering all the issues related to the research questions. The interview guide starts with an introduction of the purpose of the research and a general understanding of the background information of the University. Section 1 covers issues concerning the perception of the Line-item system which is used by Libyan Universities by the interviewee. In sections 2, the interviewee was asked about the new system which will be adopted by the respective universities. The last part of the interview guide covers demographic information of the interviewee. A copy of the interview guide and its cover letter will be presented in Appendix F.

4.5.3.2.3 Administration of the Interview

An introduction letter was sent to the Libyan High Education Ministry to inform the ministry about the intention to conduct interviews with vice chancellors of the chosen universities in the study. The vice chancellors or other key respondents were also contacted by letter to inform them about the study and to make appointments for all the interviews. Follow-up telephone calls were made three days after the letter was sent out to confirm the appointments. When a respondent agrees to be interviewed, an appointment is made for an interview at a time convenient for the respondent/interviewee. At the beginning of each interview session, the researcher would introduce himself; explain the objective of the study as well as the potential contributions that the interviewee could make to the study. The interviewer also used hand-writing notes.

4.6 Conclusion

This chapter has provided a summarised design of the research and methodologies to be adopted. In general, the reviews of the literature has assisted in identifying the "gaps" whereby questions to be raised were developed. The literature also drew some lessons concerning PBBB readiness to adopt and implementation which requires specific methodology to be used in order to test the prospects and potentials of its adoption. In particular, this chapter has discussed supportive literature on the adoption of the questionnaire for data collection purposes.

It has also been argued that the selection of Libyan institutions of higher learning as the case study was with the aim of bridging the literature gap that currently exists. The study's methodology also focuses on the conduct of tests on Libya as a case study to address factors influencing the willingness to adopt PBBS in the selected institutions. As discussed in this chapter, most of the measurements of the constructs and variables were derived from latest researches as well as past literature. Based on the variables or

constructs identified, hypotheses have been developed, some of which influence the readiness to adopt PBBS while others require further tests. However, conducting a pilot study helped to assess the reliability of the constructs further, where the main features of the quantitative and qualitative methods adopted were also covered. The next chapter presents the data analysis and findings of the study and discusses the results.

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION OF RESULTS

5.1 Introduction

In line with the multi-method research approach, this chapter analyses the data collected in the survey and present a discussion on the finding of the results. The questionnaire surveys were conducted to collect primary data for the purpose of examining the relationships between six independent variables (Relative advantage, organisational support, satisfaction with Line-Item Budgeting System, barriers to implementation, tolerance for ambiguity and training) and the dependent variable (readiness to adopt PBBS). In addition, the collected data was intended to be utilised in the examination of the moderating effect of attitude towards change in the relationship between relative advantage and readiness to adopt PBBS, as well as the relationship between tolerance for ambiguity and readiness to adopt PBBS. The analysis covers descriptive statistics, comparison of responses between various groups or categories of respondents and exploration of relationships among variables, which culminates in the testing of the hypotheses developed earlier in the study. The main software used in the process was the Statistical Package for Social Sciences (SPSS).

5.2 Preliminary Data Analysis

This part involves the use of various procedures to obtain descriptive statistics which are helpful in describing the characteristics of the sample, checking for violation of assumptions underlying the statistical techniques to be used, and in some cases, to address specific research questions (Pall ant, 2005).

5.2.1 Data Screening and Cleaning

This is the preliminary step before analysing the collected data. Various authors including Pallant (2005) and Hair et al. (2006) consider it an essential step since it clears

data entry and eliminates mistakes that can completely mess up the analysis. The screening process involves steps such as checking for scores that are out of range or not within range of possible scores, finding the case that is involved in such an error, or where the error has occurred, as well as making the necessary corrections in the data file. The issue of missing values was also pointed out by these authors, especially when dealing with human beings. Several approaches to dealing with missing values are suggested by the authors. First, the exclusion of the cases list wise whereby only cases will full data on all variables is included in the analysis. The negative side of this option is the reduction of the sample size. Second, exclusion of cases pair wise whereby a case is only excluded if it is missing the data required for a specific analysis. The positive side of this option is that the case will be included in other analysis for which it has the necessary information. Third is replacing the missing data with the sample mean. In this option is detrimental when the dataset has many missing values as it severely distorts the results of an analysis.

In this study, the data was collected using a Likert scale of five possible scores (1 – strongly disagree, 2-disagree, 3-neither agree nor disagree, 4-agree, 5-strongly agree). The data was screened to determine whether entries of responses were within the range of 1 to 5 for all 432 respondents. For the categorical demographic data, the procedure was performed accordingly and all entries were found to be in order. Items that were negatively worded (e.g. items 1 to 6 in the constrict attitude towards change) were reverse coded to be in the same category with the positively worded items (Hair, et al., 2006). No missing values were observed in the dataset. The list of codes used for the data is presented in Appendix A.

In addition to that, a number of in-depth interviews were conducted with key respondents involved with the institutes of higher learning to get a deeper understanding

on the readiness to adopt PBBS. The discussion of the findings using this qualitative approach is also presented.

5.2.2 Response Rate

Seven hundred questionnaire forms were distributed to 11 Libyan public universities and 4 public institutions of higher learning. The targeted respondents were employees (academic and non-academic) with an accounting and/or finance background. Out of the 700 questionnaire 500 were completed and returned, making the response rate 71.4 present. After a thorough check of the returned questionnaire, it was found that only 432 could be used for analysis. The discarded questionnaires were mostly incomplete, rendering them unusable. Therefore, the effective response rate was actually 61.7 present, which is relatively high compared to many other survey researches in the field. The number of respondents per university or institution varied from 12 (2.8 present) to 40 (9.3 present).**Table 4-2** provides the detailed distribution of the respondents according to the universities and institutions under study.

Table 4-2: Distribution of Questionnaires and Respondents According to Universities and Institutions

S/No.	University/ Institution	Number of questionnaires distributed	Number of Usable Responses	Percentage
1	Garyouins University	60	40	9,3
2	Allfath University	50	37	8,6
3	Sabaha University	60	40	9,3
4	Sirt University	60	35	8,1
5	Allmargab University	60	36	8,3
6	7 April University	50	33	7,6
7	7 October University	50	32	7,4
8	Naser University	60	37	8,6
9	Alljabal Agarbi University	50	32	7,4
10	Omar Allmogthar University	50	34	7,9
11	Arab Medicine University	50	26	6,0
12	Benwilled Higher Institution	25	13	3,0
13	Civil Aviation and Meteorology Higher Institute	25	13	3,0
14	Zeltin Higher Institution	25	12	2,8
15	Mosrata Higher Institution	25	12	2,8
	TOTAL	**700**	**432**	**100**

In practice, several efforts have been suggested by authors such as Dillman (1978) in a bid to improve the response rate and reduce non-response bias. It is essential to note that

during design stage, the potential biasness that the questionnaire may pose such as double-barrel meaning, confused phrases or terms and misunderstood concepts or constructs have been kept to a minimal by way of pilot testing. Other efforts to reduce the non-response bias which includes, among other things, enclosing a stamped self-addressed envelope with the survey, assurances of privacy and anonymity (see questionnaire introductory information on Appendix B) and the use of stimuli like follow-ups (telephone calls, visits and mail), which were highly adhered to in this research.

5.2.3 Non-response Bias

Non-response bias can be described as the dissimilarity between the answers of respondents and non-respondents (Lambert & Harrington, 1990). In practice, the two approaches are commonly used in assessing the non-response bias. The first approach, as suggested by Lambert and Harrington (1990) involves comparing responses of the early returned surveys to the later ones. The later respondents were considered as surrogates for non-respondents. The idea was that later respondents, in which considerable stimuli like follow-ups were required, are more likely to answer the questionnaire like non-respondents (Swafford et al., 2006). The second approach, used by Chen and Paulraj (2004) and Swafford et al. (2006), involves selecting a number of non-respondents and collecting information on some of their population profile (size of employees). This information is combined with that of respondents to represent the mean value of the population. The sample (respondents) and population (respondents and the selected non-respondents) means that the selected demographic variables are compared for whichever significant differences.

In this research, non-response bias was tested by comparing each table response. . The independent sample t-test analysis, which was performed on these two values, yielded

no significant difference (alpha = 0.05) between the sample and the population means. These results proposed that non-response bias was not visible to be a problem in this study.

5.2.4 Normality Test

Normality, being the basic assumption in data analysis refers to the shape of the data distribution for an individual metric variable and its correspondence to the usual delivery. Hair et al. (2006) terms it as the benchmark for statistical methods. As it is a requirement for one to use the F and t-statistics, this requires that the variation from the normal distribution needs to be small. For large variations, this renders all statistical tests resulting from the analysis invalid. There are a number of ways in which one could describe the distribution if it differs from the normal distribution. Two shape descriptors, skewedness and kurtosis, are among the most popular approaches in describing the shape or distribution of a dataset.

Skewedness looks at the distribution balance, whether it is centred (symmetric) or it has shifted to the left or right. It is a measure of symmetry or a distribution, and values of skewedness falling outside the range of -1 to +1 indicate a substantially skewed distribution (Hair, et al., 2006). Kline (1998) on the other hand suggests a higher threshold is 3. In this study, the skewedness values for measurement items ranged from -1.01 to +1.51, with only two extremes being outside the -1 to +1 limit but within the -3 to +3 limit.

Kurtosis, which is an assessment of flatness or peakness of a distribution when compared to the normal distribution, has a recommended range from -2.0 to +2.0 as per the recommendation of Coakes and Steed (2003). However, Kline (1998) suggests a higher threshold of +/- 10. The higher the positive value, the higher is the peakedness and vice versa. In this study, a majority of the kurtosis values were within the recommended limits of +/- 2 (ranges from -2.01 to +8.04), five values were observed to

be outside the +/- 2 limit but within the +/-10 limit (as seen in Appendix A and B). The results from this approach led to the conclusion that the cleaned dataset has no serious violation of the normality assumption; therefore, it is assumed that the data is normally distribution. Referring to section 4.5.5, normalisation of the dataset has been assumed by adopting Kline's (1998) definition of skewedness and kurtosis threshold.

5.2.5 Respondents Profile

In this section, the profile of the respondents who responded to the questionnaire is presented. It is noted that more than 80 percent of the respondents were male, the majority of them (more than 90 percent) were aged between 20 years and 50 years with a working experience ranging for most of them (more than 70 percent) from 6 years to 25 years. In terms of qualifications, about 80 percent were holders of a Bachelors' degree and above, working as full time employees in either the academic department or finance department. Only 8.3 percent of the respondents were from other departments who had some level of accounting knowledge or, practices or had technical experiences. At the time when this research was being conducted, none of the respondents indicated they had used PBBS in their universities or institutions of higher learning, although 78 percent of them believed that readiness to adopt PBBS in their universities will be successful. **Table 4-3** presents the details of the respondents' demographic profiles.

Table 4-3: Demographic Profiles of the Respondents

Profile	Frequency	Percentage
Gender:		
Male	348	80.6
Female	84	19.4
Age:		
Under 20 years	7	1.6
20 to 30 years	152	35.2
31 to 40 years	143	33.1
41 to 50 years	97	22.5
51 years and Above	33	7.6
Work Experience:		
Under 5 years	44	10.2
6 to 10 years	87	20.1
11 to 15 years	105	24.3
16 to 20 years	123	28.5
21 to 25 years	45	10.4
26 to 30 years	19	4.4
31 years and Above	9	2.1
Qualification:		
Lower Diploma	22	5.1
Higher Diploma	58	13.4
Bachelor Degree	191	44.2
Master's Degree	74	17.1
Doctorate Degree (PhD)	87	20.1
Work Department		
Academic	105	24.3
Finance / Accounting	291	67.4
Other	36	8.3
Employment Status:		
Full Time	432	100
Part Time	0	0
Is PPBS in Use?		
Yes	0	0
No	432	100
Readiness to adopt PBBS in the Higher Institutions learning		
Yes	338	78.2
No	94	21.8

5.2.6 Descriptive Statistics

To determine the status of each construct (dependent, independent and moderator) statistics of descriptive, such as minimum, maximum, mean and standard deviation, were used as means of interpretation. The mean value of the main variables was taken as the measure on a five Likert-scale. A Likert-scale indicates that the bigger the number on the five point scale, the higher the goodness of the component. Values close to zero are considered poorer, while values nearer to five are considered better. A score

of 4 or more indicates high agreement with a particular criterion; where a score between 3 and 4 (excluding 4) indicates moderate agreement and a score of less than 3 indicates a low agreement with a criterion. A descriptive analysis of all the eight main variables is shown in **Table 4-4**. The calculated values are as presented in Appendix C.

Table 4-4: Descriptive Statistics

N	Component	Minimum	Maximum	Mean	Std.Deviation
432	Relative advantage (RA)	3.40	5.00	4.29	.39
432	Organizational support (OS)	2.25	5.00	4.38	.47
432	Satisfaction with line-items (SL)	1.00	4.00	1.56	.45
432	Barriers of adoption (BA)	1.00	4.00	1.61	.44
432	Tolerance for ambiguity (TA)	1.00	4.67	2.67	1.06
432	Training (TR)	3.00	5.00	4.45	.49
432	Attitude towards change (ATC)	3.73	5.00	4.45	.45
432	Readiness to adopt (PBBS)	3.33	5.00	4.54	.44

Table 4-4 presents the minimum, maximum, mean and standard deviation of the variables. The minimum is the smallest value of the rank weightage assigned by the respondents. The corresponding highest value of each variable represents the components or factors influencing the readiness to adopt PBBS termed as the maximum value. Mean is the average score calculated based on the scores assigned by respondents over the total number of variables representing the components or factors above. Standard deviation is a measure of how dispersed the data set is from the central point average calculated scores or the mean scores of each components discussed above.

The means scores of readiness to adopt PBBS, relative advantage, organisational support, training and attitude towards change range between 4.29 for relative advantage and 4.54 for the readiness to adopt PBBS. This indicates that the majority of the respondents were inclined to adopt the new system and valued its relative advantage compared to the current system, demand organisational support and training and has a positive attitude towards the new system. However, satisfaction with Line-Item system, barriers to adopt and tolerance for ambiguity had low mean scores at 1.56, 1.61 and 2.67 respectively. The highest mean scores of the independent variables were training at 4.45 and attitude towards change at 4.45 showing that training and attitude towards change

have high level of perceptions. The lowest mean score of satisfaction with the Line-Item accounting method (1.56) reflects the level of dissatisfaction that the respondents have towards the current system.

The standard deviation ranged between 0.38 for relative advantage and 1.06 for tolerance for ambiguity. The standard deviation values indicated that there were some levels of variability in the answers by the respondents. In other words, the answers were considerably different from one respondent to the other.

5.2.7 Correlation and Linearity

Correlation is one of the statistical techniques that are used to explore the relationship between variables. The technique is used to explain the strength and direction of a relationship between two variables (Pallant, 2005). The strength and direction of this relationship is provided by a statistic known as the Pearson's product-moment correlation, rho, which can be assessed for its statistical significance. Its value ranges between +1 to -1, where the extreme value indicates a strong relationship in the corresponding direction and 0 indicates no relationship. Pallant (2005) stated that different guidelines on the interpretation of the rho or r have been provided by different authors. For example, Cohen (1988) suggested 0.10 <_ r <_ 0.29 or -0.10 <_r <_-0.29 represents small strength, 0.30<_ r <_0.49 or 0.30 >_ r >_ -0.49 represents medium strength and 0.5- <_ r <_1.0 or -0.50 ->_r >_-1.0 represents large strength.

Table 4-5: Correlations among Summated Study Variables

Var.	OS	SL	TR	RA	BA	TA	ATC	PBBS
OS	1							
SL	-0,147**	1						
TR	0,178**	-0,188**	1					
RA	0,308**	-0,212**	0,120*	1				
BA	-0,184**	0,152**	-0,154**	-0,193**	1			
TA	0,013	0,078	-0,017	0,050	-0,068	1		
ATC	0,240**	-0,229**	0,090	0,120*	-0,314**	-0,076	1	
PBBS	0,279**	-0,246**	0,206**	0,173**	-0,193**	0,019	0,303**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Based on the visual inspection of **Table 4-5**, the correlation matrix between the measurement items showed mixed results with some r values being above 0.3 (medium to large strength) and significant at the 0.05 level of significance. The value 0.3 is the cut-off point for many statistical analyses, e.g. exploratory factory analysis, as suggested by Tabachnick and Fidell (2001), where lower values are not suitable for factor analysing the data. Five items from the variable perceived barriers of readiness to adopt PBBS (ba1, ba2, ba3, ba4, ba5), six items for attitude towards change (atc1, atc2, atc3, atc4, atc5 and atc6) and three items for the dependent variable, readiness to adopt PBBS (PBBS6, PBBS7 and PBBS8) were dropped from further analysis due to a very high correlation among them and the other study items. This is to alleviate the possibility of encountering multicollinearity problems that emanate from a high correlation amongst independent variable items.

On the issue of linearity (linear relationship of variables), Hair et al. (2006) and Pallant (2005) suggested the use of P-P plots to check for the relationship. When the plots show a pattern close to the diagonal line, then it is assumed that a linear relationship exists. A visual inspection of the P-P plots indicated that the items from the predictor variables were linearly related to those from the criterion variables.

Table 4-6: Multicollinearity Test

Variable	VIF	Tolerance	Condition Index
OS	1.00	0.92	21.13
SL	1.00	0.94	19.95
TR	1.00	0.96	18.43
RA	1.00	0.97	20.47
BA	1.00	0.96	7.39
TA	1.00	1.00	22.14
ATC	1.00	0.91	19.46

The issue of multicollinearity, i.e. the degree to which a variable's effects could be predicted or accounted for by the other variables in the analysis was also assessed using the variance inflating factor (VIF) and tolerance. According to Pallant (2005), tolerance is a statistical indicator to measure how a dependent variable is not explained by the

other independent variables in the model (i.e. 1 – R2). Small values (< 0.10) suggest high multicollinearity through the indication of high multiple correlation with other variables. VIF (the inverse of tolerance) values of greater than 10 would indicate multicollinearity (Pallant, 2005). The calculated values for the two indicators are presented in **Table 4-6**. A visual inspection of these results indicates that the problem of multicollinearity was not to be expected.

5.2.8 Group Comparison of Responses

This section presents the comparison of responses between different categories of respondents. The categories to be used in the comparison includes gender, age groups, work experience, qualification, work department and the perception of the prospective successful readiness to adopt PBBS in the respondent's firm or organisation. The comparison was intended to determine if certain characteristics of the respondents had an influence on the responses. To accomplish the comparison process, Pallant (2005) and Hair et al. (2006) suggested two types of tests: t-test and the analysis of variance (ANOVA). In the case of the t-test, the independent samples t-test was used. This test is employed when one needs to compare the mean scores of two different groups of respondents or conditions to see if the prevailing characteristics or conditions of the groups influence the responses. The test assesses the significance of the statistical difference between two independent samples means for a single variable. The t-test is the ratio of the difference between the sample means to their standard error. The t-statistics is compared to the critical value that is dependent on the significance level (e.g. for alpha = 0.05 t critical is 1.96).

According to Hair et al. (2006), analysis of variance (ANOVA) is a "statistical technique used to determine whether samples from two or more groups come from the population with equal means (i.e. do the group means differ significantly?)".

The test compares the variance (variability in scores) between the different groups with the variability within each group. A large F-statistic indicates the existence of more variability between the groups than within each group. The use of post-hoc tests is necessitated by the fact that the F-test does not indicate which group's mean differs significantly. Due to the fact that groups analysis of variance is used when one is testing different subjects or cases in each independent group (Pallant, 2005).

In this study, the t-test is conducted to test for differences in means for all study items between males and females. The SPSS program results indicated that there was no significant difference in the means of the respondents for all study items. Similarly, when the mean scores of responses from the respondents who believed that there would be a successful implementation of PBBS in their organisations or firms and those who did not believe so were compared; the results indicated that two items (ba8 and atc6) had significant differences in the means of responses from the two groups. On the analysis of variance, a number of differences in group means were observed between various groups. For instance, when the test was performed using age groups to all study items, six items (ra2, ra4, os8, s13, atc1 and atc14) had results indicating differences between one pair and two pairs of groups being compared. Similarly, using work experience groups, eight items (os2, os3, s14, atc3, pbb1, ta1, ta4 and ta6) showed differences in means for various pairings. The same test for categories of qualifications indicated differences in means exist between varying groups for three items (ra2, ra5 and s11).

5.3 Factor Analysis

According to Dyer et al. (2005) factor analysis is a highly statistical technique aimed to explore and confirm common variance among different set of items or variables to load them in a common factor or latent structure. Hair et al. (2006) states that the primary purpose of factor analysis is to classify the underlying construction among the variables

in the analysis. The technique allows for condensing big variables or scale items set down to a smaller, more manageable number of dimensions or factors to be performed (Pallant, 2005). The two main approaches are used in analysing factors are: the exploratory factor analysis (EFA) and the confirmatory factor analysis (CFA). Nunnally and Bernstein (1994) pointed out that the objective of EFA is to identify the underlying structure, while that of CFA lies in seeking to validate some prior hypothesised structure among items or variables. The current research used the EFA method to accomplish the required analysis. The EFA method assisted in directing the research towards the selection of the subset variables or scale items for t-test and ANOVA analysis. The appropriate combination of the components, therefore it can be chosen for the purposes of grouping and structuring the independent variables for relationship levels and extents of determination with the dependent variables. As the research adopted items from various authors, it was necessary to use EFA to determine the underlying structure of the proposed variables.

5.3.1 Exploratory Factor Analysis (EFA)

In the early part of performing the EFA, the suitability of the dataset for factor analysis was examined. The examination involves the consideration of two things: the sample size and the strength of the relationship among variables or items. The sample size consideration emanates from the fact that factors obtained from small datasets do not generalise as well as those devised from big samples (Pallant, 2005). Some authors including Tabanchnick and Fidell (2001) suggests that five cases for each item that has to be factor analysed is adequate for the procedure to be performed. Tabachnick and Fidell (2001) further suggests that the strength of the inter-correlations among items to be accessed through correlations among items, and they recommend that there should be some values of the correlation coefficient above 0.3. Factor analysis may not be suitable

in cases where there are few or no correlations coefficients found to be above 0.3 in the correlation matrix.

Bartlett (1954) introduces a measure known as Bartlett's test of sphericity for the purpose of assessing the factorability of a dataset (Pallant, 2005). This test determines if the matrix of correlation is an identity matrix where factor analysis becomes meaningless when an identity matrix exists (George & Mallery, 1999; Field, 2000). Furthermore, Keiser (1970, 1974) suggests another measure known as the Keiser-Meyer-Olkin (KMO) measure of sampling adequacy (ranging from 0 to 10) for a similar purpose (Pallant, 2005). The index measures the adequacy of a sample in terms of the distribution of values for the execution of factor analysis (George & Mallery, 1999). The Bartlett's test of sphericity needs a significance of ($p < 0.05$) for factor analysis to be considered suitable. A threshold point for the KMO index of 0.6 or above suggest that the dataset is suitable for factor analysis (Tabachnick & Fidell, 2001), however, other authors suggest a lower cut-off value of 0.5 (George & Mallery, 1999; Field 2000; Hair at al., 2006). In this research, the data is divided into three different groups for the purpose of factor analysis: independent variables, moderating variable and dependent variable.

The six independent variables (relative advantage -9 items, organisational support -8 items, satisfaction with Line-Item system – 10 items, tolerance for ambiguity – 9 items, perceived barriers of the readiness to adopt PBBS – 3 items [5 dropped] and training – 3 items) have a total of 42 items to be considered for explanatory factor analysis in the first group. With a sample size of 432, the dataset meets the minimum requirement for sample size in relation to the number of items considered for factor analysis (about 10 samples for each case). The KMO index was 0.799 and Bartlett's test of sphericity was high, associated with a probability value of 0.000. The moderating variable attitude towards change has 12 items to be considered for exploratory factor analysis. This

brings the ratio to 36 cases for each item when the sample of 432 respondents was used. The KMO test for this set was 0.905 and Bartlett's test of sphericity was also high, where both were associated with a significance of 0.000. The dependent variable, readiness to adopt PBBS (whether it was possible to implement) set of items, comprised of 9 items to be considered for exploratory factor analysis. This resulted in a ratio of 48 cases per 1 item which brought the KMO index at 0.805, while the Bartlett's test of sphericity was high as it was associated with a significance level of 0.000.

In all three groups of variables, the KMO index was significant with p=0.000 and the ratio of cases to study items were far above the recommended ratio of 5 cases to 1 item for all variables. Moreover, as reported in the section discussing correlation, many of the inter-to-item correlations in all three sets of variables were above 0.3, making the use of exploratory factor analysis appropriate. In view of the number of cases per item, both tests (KMO and Bartlett's test) showed that it was conclusive that the suitability of the variables for factor analysis was supported.

The next step after preliminary analysis is factor extraction. This involves the process of determining the smallest number of factors that can be used to best represent the interrelations among the set of variables under study. A variety of approaches to extract the underlying factors exist however, most commonly used is the principle components analysis, which considers the total variance and derives factors containing small proportions of a unique variance, and in some instances, error variance (Hair et al., 2006).

This research used this approach to extract factors since it was intended to focus on a minimum number of factors that can explain the highest portion of the total variance represented in the original set of items. Factor loadings, that are the correlations of the variables with the factor, played an important role in this process. According to Kline (1998), high factor loading implied that the factors and variables are critical. Hair et al.

(2006) recommend a cut-off point of 0.4 as the minimum acceptable point, but values of ± 0.5 are generally considered necessary for practical purposes.

Techniques such as Keiser's criterion and Scree test are used in deciding on the number of factors remaining during the procedure for EFA. Keiser's criterion (or Eigen value rule) only allows retaining factors with an Eigenvalue of 1.0 and above for further analysis (Kim & Mueller, 1978; Malhotra, 2004; Hair et al. 2006). The Scree test developed by Catell (1966) and Pallant (2005) plots each Eigenvalue of factors and by inspection, one has to find the point where the curve changes direction and becomes horizontal where factors above this elbow are to be retained. Furthermore, total variance extracted by the factors is considered, whereby in many cases it depends on the kind of problem that one is dealing with. Malhotra (2004) recommends that the extracted factors should represent at least 60 percent of the variation, while Hair et al. (2006), are of the opinion that the variance extracted above 50 percent is a good rule of thumb suggesting adequate convergence.

In this study, factors were extracted using the principal component analysis. The initial results showed that most of the items load on the first factor, with many more cross-loading between two factors, which required that a method of rotation be applied. The Varimax rotation with Keiser-normalisation was conducted to clarify the factors (Loehlin, 1998; Hair et al., 2006). After a visual inspection of the loadings, items with loadings lower than the threshold of 0.5 on the variables which were supposed to be measured were discarded. A few items that were loaded on constructs that were not supposed to measure (nuisance items) were also discarded from further analysis. In addition, several items were observed to have cross-loaded significantly on two different factors. These were also discarded from further analysis. All three approaches for retaining factors were considered, i.e. Keiser's criterion, Scree plots and the

Variance Extraction approaches. Only constructs that fulfilled all the above three criteria on factor retention were retained for further analysis. **Table 4-6** provides the summarised process and some results. It may be noted that items were also dropped from further analysis when they made a factor with less than three study items.

For the variable organisational support, out of eight items, six items (os1, os2, os3, os4, os5, os7 and os8) survived the EFA procedure, while only three out of nine items (ra3, ra4 and ra5) survived the procedure for the variable relative advantage. The variable 'satisfaction with Line-Item system' had four items (s12, s17, s18 and s11) that survived the EFA procedure, while the variable 'perceived barriers to the readiness to adopt PBBS and 'training' had all three items considered for EFA for each variable surviving the procedure (ba6, ba7, ba8 and tr1, tr2 and tr3 respectively). Tolerance for ambiguity has five study items that went through the EFA procedure (ta2, ta3, ta4, ta5 and ta9). The six independent variables were extracted with a variance extraction of 64.856 percent.

Table 4-7: Exploratory Factor Analysis Process for Study Variables

Number of Extracted Factors	KMO	Variance Extracted (%)	Remarks
Independent Variables* **Relative advantage, Organizational ,Satisfaction with line-items with, Barriers, Tolerance for ambiguity and Training**			
12	0.80	67.67	sl3, sl4, sl5, sl6, sl9. ra6, ra7, ra8: dropped - two item factors.
8	0.79	64.67	os6: dropped - cross-loading; sl1, ta1: dropped - Two item factor.
8	0.77	65.50	Ta6, ta8: dropped -
7	0.73	64.06	ra9: dropped - cross-loading
7	0.77	65.26	ta7: dropped - cross-loading
7	0.77	66.31	ra1, ra2: dropped - cross-loading
6	0.76	64.86	Final Set.
Moderating Variable (Attitude towards change)			
1	0.91	79.15	atc8: dropped - factor loading lower than 0.5
1	0.90	78.75	atc7: dropped - factor loading lower than 0.5
1	0.90	81.47	Final set.
Dependent Variable (readiness to adopt of performance based budgeting)			
1	0.81	69.78	Final set.

* Theoretically it was expected that the measurement items would group into six variables that were identified in the literature. Due to cross-loadings, the number for the independent variables (factors) increased to 12 during the initial stages of the EFA process. The number drops to 6 in the final stage of the EFA process.

The moderating variable 'attitude towards change' has ten items (atc9, atc10, atc11, atc12, atc 13, atc14, atc15, atc16, atc17 and atc18) that survived the EFA procedure,

which resulted in a variance extraction of 81.5 percent, while the dependent variable readiness to adopt PBBS has six items (PBBS1, PBBS2, PBBS3, PBBS4, PBBS5 and PBBS9) that survived the EFA procedure resulting in a variance extraction of 69.8 percent. In all three sets of variables, the variances extracted were above 60 percent, which was higher than the recommended cut off values. **Table 4-7** and **Table 4-8** shows the factor loadings for each set of variables.

Table 4-8: Factor Loadings for Items of Independent Variables

	Variable					
	OS	**TA**	**SL**	**TR**	**BA**	**RA**
os4	0,82					
os5	0,79					
os2	0,78					
os7	0,74					
os3	0,67					
os1	0,66					
os8	0,57					
ta3		0,85				
ta2		0,81				
ta4		0,74				
ta5		0,71				
ta9		0,71				
sl8			0,88			
sl7			0,85			
sl10			0,80			
sl2			0,75			
tr2				0,93		
tr3				0,93		
tr1				0,90		
ba8					0,85	
ba7					0,81	
ba6					0,70	
ra5						0,78
ra4						0,73
ra3						0,68

- Organizational support (OS) Satisfaction with line- items (SL)
- Tolerance for ambiguity (TA) Training (TR)
- Barriers of adoption (BA) Relative advantage (R

Table 4-9: Factor Loadings for Items of the Moderating Variable

	Variable
	Attitude towards change (ATC)
atc12	0,94
atc17	0,93
atc11	0,92
atc13	0,92
atc18	0,91
atc15	0,91
atc16	0,91
atc14	0,91
atc10	0,87
atc9	0,87

Table 4-10: Factor Loadings for Items of the Dependent Variable

	Variable
	PBBS adoption (PBBS)
PBBS4	0,89
PBBS5	0,87
PBBS9	0,86
PBBS2	0,84
PBBS3	0,82
PBBS1	0,74

The results of EFA were used to create summated scales for each study variable or construct. The summated scales were formed by combining the individual items into single composite measure. In this study, all items that loaded highly to each variable were combined and an average score was used as a replacement variable. According to Hair et al. (2006), the summated scales provides two precise benefits: one, it provides a means of overcoming, to some extent, the measurement error inherent in all measured items; two it has the ability to represent the multiple aspects of a concept in a single measure. Each of the summated scales for this study originated from the conceptual definition that specified the theoretical basis for the variable. As Hair et al. (2006) puts it "this defines the concept being represented in terms that are applicable to the research

context". Therefore, the conceptual definition for each of the summated scales is as follows:

1. Relative Advantage (RA) is defined as "the degree to which an innovation is perceived as better than the idea it supersedes (Rogers, 1995, 124). Also redefining true advantage as the degree to which using the innovation is perceived as being better than using the current system.
2. Organisational Support (OS) or top management support refers to the degree to which efforts are promoted by the corporate management of the organisation.
3. Satisfaction with Line-Item system (SL): Traditionally, budgeting has defined its mission in terms of identifying the existing funds and how this fund is used. This is "where we are, where do we go from here". A Line-Item budget is primarily a tool for controlling expenditure. Oliver (1999) defined satisfaction in general as the perception of an enjoyable achievement of a service.
4. Perceived Barriers of readiness to adopt PBBS (PB) can be defined as the lack of resources and knowledge, the skill level of the business operation, lack of trust in the system and the lack of readiness (Gragg & King, 1993; Mehrtens et al., 2001; Darch & Lucas, 2002; Duan et al., 2002; Van Akkerton & Cavaye, 1999; Bode & Burn, 2002).
5. Tolerance for Ambiguity (TA): MacDonald (1970) defines tolerance for ambiguity as readiness to agree to a state of affairs capable of alternative interpretations, or of alternative outcomes, e.g. feeling comfortable (or at least not feeling uncomfortable) when faced with a complex social issue in which opposed principles are intermingled.
6. Training (TR) refers to the training programmes for the preparation of employees capable of estimating revenue and expenditure and programme development in accordance with the requirement of the new system (Allwozi, 1999).

7. Attitude towards change (ATC) is defined as "view attitude consists of a person's cognitions about change, affective reactions to change and behavioural tendency towards change (Dunham et al., 1989). In addition, attitude towards change is defined as "feeling and predispositions towards their jobs and employers in a budgetary context."
8. Readiness to adopt PBBS: Performance-based Budgeting is defined as "requiring strategic planning regarding agency mission, goals and objectives, and a process that requests quantifiable data that provides meaningful information about the programme outcomes" (Melkers & Willoughby, 1998).

5.4 Validity Assessment of the Measures

The validity of a measure involves the assessment of the degree to which it correctly measures its targeted variable (O'Leary-Kelly & Vokurka, 1998; Garver & Mentzer, 1999). In other words, it is the extent to which scale items measure the abstract or theoretical construct (Chen & Paulraj, 2004; Hair et al., 2006). Construct validity is made up of content validity, substantive validity, unidimensionality, reliability, and convergent validity, discriminate validity and nomological/predictive validity (Hair et al., 2006; Garver & Mentzer, 1999; O'Leary-Kelly & Vokurka, 1998). To achieve construct validity, all of these components must be satisfied.

Content validity and substantive validity need to statistical test, but they are very important to the validity of a construct. It can also be defined as, "if a measurement scale does not possess content and substantive validity, it cannot possess construct validity no matter what the statistical analysis indicates" (Anderson & Gerbing, 1988, p.418). The process of construct validation starts with the establishment of content and substance validity, followed by the statistical process that begins with testing for unidimensionality, after which construct reliability is established. Only after the

construct has been proven to be unidimensional and reliable, can convergent validity, discriminate validity and nomlogical/predictive validity be tested.

5.4.1 Content and Substantive Validity

Content validity (sometimes known as face validity) is the assessment of the correspondence of variables to be included in a scale and its conceptual definition (Hair et al., 2006). In the process, the correspondence between the individual items and the concept is subjectively assessed through the ratings by expert judges, pre-test with multiple sub-populations or other means, with the objective of ensuring that the selection of scale items extends past empirical issues to include theoretical and practical considerations. This is essential to demonstrate that the empirical indicators are logically, as well as theoretically linked to the construct (O'Leary-Kelly & Vokurka, 1998).

However, substantive validity refers to "the theoretical linkage between the construct (also called the latent variable) and its items. Whereas content validity refers to the correlation between the latent variable and its scale items, while substantive validity is the linkage between individual items and the latent variable (Garver & Mentzer, 1999). Logically, it follows that a variable will definitely have substantive validity if it has content validity.

In this study, the content validity of the questionnaire is based on the review of the literature, whereby a diverse range of journal articles and other materials were reviewed to determine the relevant items for the questionnaire. Eight experts (four academicians and four practitioners) were consulted to evaluate and examine items for the questionnaire on completeness and appropriateness of the constructs. Their comments were incorporated in the final questionnaire that was distributed for the pilot study. Before embarking on the survey, a pilot study, in which thirty questionnaires were used, was conducted to test among other things the face validity of the questionnaire. There

were no obvious problems that were reported during the pilot study regarding the questionnaire items. Therefore, it is asserted that constructs in the study under consideration had content validity and subsequently substantive validity.

5.4.2 Unidimensionality

Unidimensionality refers to the existence of a single trait or construct underlying a set of measurement items (Hair et al., 2006). Conditions for establishing unidimensionality include items being significantly associated with an underlying construct, as well as each item being associated with only one variable (Garver & Mentzer, 1999). According to O'Leary-Kelly and Vorkuva (1998) there are two common methods for assessing the unidimensionality of a measurement item, i.e. EFA and CFA. In EFA, the process of identifying items that are strongly linked (high factor loadings) to a particular variable is used and it relies on the size of factor loadings to demonstrate unidimensionality. Hair et al. (2006) suggest loadings of ±0.30 to ±0.40 to be acceptable; however, for practicability ±0.50 is used.

Earlier, it was reported that items to be retained in EFA were those attaining their factor loadings of 0.50 or above. This confirms that evidence exists to support the presence of unidimensionality in the set of variables used in this research.

5.4.3 Reliability

Reliability is described as the extent to which measures are free from error and thus, able to produce consistent results (Hair et al., 2006; Pallant, 2005; Zikmund, 2003; Garver & Mentzer, 1999; Kline, 1998). Reliability is known to have two dimensions underlying it: repeatability and internal consistency. The commonly used method to determine repeatability is the test-retest method that involves the administration of the same scale or measure to the same respondents at two separate points in time (Zikmund, 2003; Kline, 1998). The method is basically a longitudinal study approach in which, in

many cases, the first study sensitises respondents, thus influencing their participation in the repeat study. Also time lapse has an effect, especially when it happens to be too short or too long. The techniques of splitting halves, i.e. taking results from one half of the scale items (e.g. odd numbered items) and comparing them to the results from the other half is the most basic method for checking the internal consistency of measures containing large number of items (Zikmund, 2003; Kline, 1998).

In studying the reliability of a measure, it all culminates in a reliability coefficient. The most common reliability coefficient is the Cronbach's Alpha value, which is calculated using the split-half method. In much of the literature including all those mentioned in this section, alpha values of 0.7 and above indicate good reliability. There are cases of values lower than 0.7 being acceptable depending on the kind of studies being conducted, e.g. in exploratory studies, values as low as 0.5 and 0.6 are acceptable (Nunnally, 1967). It is stated in Garver and Mentzer (1999) that for one to determine Cronbach Alpha, there should be at least three items in the construct in question.

The results of reliability analysis for this study are presented in **Table 4-10**. It is seen that all variables demonstrated acceptable values of reliability coefficient (Cronbach Alpha), with values ranging from 0.658 to 0.977. These results indicate that the study variables demonstrate good reliability, as the alpha values are above the recommended 0.7 threshold.

Table 4-11: Results of Reliability Analysis and Variance Extracted for Study Variables

Variable	Number of Items	Reliability Cronbach's Alpha	Variance Extracted (%)
Relative Advantage (RA)	3	0.66	59.50
Organizational Support (OS)	7	0.86	53.90
Satisfaction with Line item (SL)	4	0.85	69.62
Perceived Barriers of PBBS Adoption (BA)	3	0.73	65.43
Tolerance for Ambiguity (TA)	5	0.82	58.74
Training (TR)	3	0.93	88.24
Attitude towards Change (ATC)	10	0.98	82.76
Readiness to adopt PBBS	6	0.91	69.78

5.4.4 Convergence Validity

Convergence validity measures the similarity or convergence (the extent to which the items share a high proportion of variance in common) between the individual items measuring the same construct (Hair et al., 2006). There are several ways available for assessing the relative amount of convergent validity among measurement items. These include factor loadings, variances extracted and construct reliability. High loadings on a factor are is indication that they converge on the same common points (Hair et al., 2006; Garver & Mentzer, 1999).

When using EFA results for this test, the factor loadings need to be higher than the threshold in consideration. Hair et al. (2006) suggests that the cut-off point should be at least ±0.30 or 0.40, otherwise, for practical significance; a value of ±0.5 has to be used. Furthermore, variance extracted (VE) among a set of measurement items is seen as a summary indicator of convergence, and as a rule of thumb, a VE value of 50 percent and above suggests adequate convergence (Hair et al., 2006). Construct Reliability (CR) is also an indicator of convergence validity.

The results for this study showed that items retained for further analysis had factor scores greater than or equal to 0.5, the given threshold (**Table 4-5**, **Table 4-6**and **Table 4-7**). **Table 4-8** showed that the VE values rage from 53.9 to 88.2, all being above the recommended 50 percent threshold, while the reliability shows that the alpha ranged from 0.66 to 0.98 (one value was below 0.7 but above 0.6, the rest being above the 0.7 threshold). The result for factor loadings, variance extracted and reliability coefficient (Cronbach alpha) fulfils the requirement for convergent validity. These coefficient provided evidence of convergent validity among the study variables.

5.4.5 Discriminant Validity

Discriminant validity measures the degree to which a measure is truly distinct (unique) from other measures (O'Leary-Kelly & Vorkuva, 1998; Hair et al., 2006). Additionally, discriminant validity can be tested using the approach that involves comparing the VE values for any two constructs with the square of the correlation estimate between these two constructs (Hair et al., 2006). The VE estimates should be greater than the squared correlation estimate. According to the above authors, the logic behind this test method is that the measure should explain its items better than it explains other constructs.

Table 4-12: Test for Discriminate Validity of Study Variables

Variable	VE	r^2
RA	0.60	0.01
OS	0.54	
RA	0.60	0.05
SL	0.70	
RA	0.60	0.04
BA	0.66	
RA	0.60	0.00
TA	0.59	
RA	0.60	0.01
TR	0.88	
RA	0.60	0.01
ATC	0.83	
RA	0.60	0.03
PBBS	0.70	
OS	0.54	0.02
SL	0.70	
OS	0.54	0.03
BA	0.66	
OS	0.54	0.00
TA	0.59	
OS	0.54	0.03
TR	0.88	
OS	0.54	0.06
ATC	0.83	
OS	0.54	0.08
PBBS	0.70	
SL	0.70	0.02
BA	0.65	

Variable	VE	r^2
SL	0.70	0.01
TA	0.59	
SL	0.70	0.4
TR	0.88	
SL	0.70	0.05
ATC	0.83	
SL	0.70	0.06
PBBS	0.70	
BA	0.66	0.01
TA	0.59	
BA	0.65	0.02
TR	0.88	
BA	0.65	0.10
ATC	0.83	
BA	0.65	0.04
PBBS	0.70	
TA	0.59	0.00
TR	0.88	
TA	0.59	0.01
ATC	0.83	
TA	0.59	0.00
PBBS	0.70	
TR	0.88	0.01
ATC	0.83	
TR	0.88	0.04
PBBS	0.70	
ATC	0.83	0.09
PBBS	0.70	

Key: VE – Variance Extracted; r^2 – correlation squared.

The test performed on the variables in this study demonstrated that all variables possessed discriminant validity, as all VE values were greater than the square of the correlation coefficient for any pair of the study variables. **Table 4-11** provides all the comparisons for this test procedure. These results indicated that all study variables

possess strong characteristics that support the presence of discriminant validity in each variable.

5.4.6 Nomological Validity

Defining a construct and operationalizing it does not suffice in the determination of its conceptual meaning. It is important to examine the relationships of the construct with its antecedents and consequents (Bagozzi et al., 1991). This is a test of predictive validity, which is achievable through correlating constructs to other constructs that they should predict (Garver & Mentzer, 1999). When the constructs are correlated, the correlations between the two constructs should be statistically significant.

Table 4-13: Correlations among Summated Study Variables

Var.	OS	SL	TR	RA	BA	TA	ATC	PBBS
OS	1							
SL	-0,15**	1						
TR	0,18**	-0,19**	1					
RA	0,31**	-0,21**	0,12*	1				
BA	-0,18**	0,15**	-0,15**	-0,19**	1			
TA	0,01	0,08	-0,02	0,05	-0,07	1		
ATC	0,24**	-0,23**	0,09	0,12*	-0,31**	-0,08	1	
PBBS	0,28**	-0,25**	0,21**	0,17**	-0,19**	0,02	0,30**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Nomological validity is a test of validity that examines whether the correlations between the constructs in the measurement theory make sense (Hair et al., 2006), it assesses the relationship between theoretical constructs (Malhotra, 2004), searches to confirm correlations to be significant between the constructs as predicted and explained by theory. It is tested by examining whether the correlations among the construct in a measurement theory makes sense (Hair et al., 2006). A visual inspection of the correlations matrix (**Table 4-12**) of the variables in the study showed that most correlations were in the expected direction and the majority of them were significant, confirming the existence of nomological and predictive validity.

5.5 Hypothesis Testing

Based on previous literature review and the suggested model of the study, eight hypotheses were developed to answer the question of the research.

5.5.1 Correlations Analysis

Relationships between two variables can be analysed in various ways. The most common approaches include the correlation analysis and the regression analysis. Correlation analysis is used to investigate the strength of the relationship between two variables. The results of the Pearson correlations between readiness to adopt PBBS and other study variables (OS, SL, TR, RA, BA, TA and ATC, as seen in **Table 4-10**) indicated that the values range from -0.25 to 0.28, with the relationship between readiness to adopt PBBS and TA being non-significant. The values demonstrated the existence of small positive and negative correlation values.

The results presented above supported five of the six hypotheses that were related to direct relationships between the independent variable and the dependent variable. The significant coefficient for the independent variable in the simple linear regression indicated support for the hypothesis (Hair et al., 2006). **Table 4-14** summarises the results of hypothesis testing, showing the relationships, corresponding hypothesis, regression coefficient and its significance level and remarks on whether the hypothesis was supported or not.

Table 4-14: Results of Hypothesis Testing for Direct Relationships

Link	Hypothesis	Coefficient b (t-value)	Remarks
RA→PBBS	H1 There is positive relationship between Relative Advantage and the readiness to adopt PBBS	0.17** (3.65)	H1 Supported
TA→PBBS	H2 There is positive relationship between Tolerance for Ambiguity and the readiness to adopt PBBS	0.02 (0.36)	H2 Not Supported
SL→PBBS	H3 There is negative relationship between Satisfaction with Line items and the readiness to adopt PBBS	-0.25** (-5.26)	H3 Supported
BA→PBBS	H4There is negative relationship between Barriers and the readiness to adopt PBBS	-0.19** (-4.08)	H4 Supported
OS→PBBS	H5 There is positive relationship between organizational Support and readiness to adopt PBBS	0.28** (6.02)	H5 Supported
TR→PBBS	H6 There is positive relationship between Training and the readiness to adopt PBBS	0.21** (4.36)	H6 Supported

** Significant at $\alpha < 0.01$ level; * Significant at $\alpha < 0.05$.

5.5.2 Multiple Regression Model

Regression analysis is used to predict the dependency of one variable on the other. Depending on the complexity of the analysis, regression can be classified into two: simple and multiple regressions. Simple regression, which is equivalent to simple correlation analysis, is used to determine the relationship between the dependent (criterion) variable and the independent (predictor or explanatory) variable. Simple regression is to be developed as the simplest form of model to represent a single independent variable that explained the greatest amount of variance for the dependent variable. The purpose was to select the most influential factors determining the readiness to adopt PBBS, in the absence of other variables, or when other variables were held constant.

In contrast, whenever there are several independent variables that are considered to be predicting one variable, multiple regression analysis is seen as most appropriate. In these cases, a combination or a concerted force by more than one independent variable prove to be better at explaining the variance of the dependent variable in the developed alternative models.

The robustness of the regression analysis requires several assumptions of violation to be taken into consideration to assist in better interpretation of the data. In other words, problems may arise in analysing and interpreting the hypothetical model if such precautions are ignored. In line with this, a number of procedures have to be followed which have been suggested by Tabachnick and Fidell (2001). The procedures have been performed in the preceding section and they included tests for multicollinearity, normality, linearity and homoscedasticity.

The framework in **Figure 4-2** shows a setup that may be represented by a number of equations besides the individual links considered in the previous section. The first equation presents the relationship between six independent variables with the dependent variable, while the second setup, the moderator was included. In the third setup, the interactions of the moderator with the independent variables that had been posited to be moderated by the moderator included. In this section, the regression results correspond with Model 1 which was presented and the testing of hypotheses was performed. The equation for Model 1 was as follows:

Model 1: Multivariate model

$$PBBS = \alpha_0 + \beta_1 RA + \beta_2 TA + \beta_3 SL + \beta_4 BA + \beta_5 OS + \beta_6 TR + \beta_7 ATC + V_i$$

Where:

$PBBS_1$ = the readiness to adopt PBBS

RA = Relative Advantage

TA = Tolerance for Ambiguity

SL = Satisfaction with Line Items

BA = Barriers to Adoption

OS = organizational Support

TR = Training

α_0 = Regression Constant

β_1 = Regression Coefficient

i = 1, 2, 3, 4, 5, 6……n

ν_i = Error Term

Using the summated scores for the study variables, the results of the multiple regression analysis performed on the data were as presented in **Table 4-15**. The results showed that relative advantage (RA) and tolerance for ambiguity (TA) played no role in predicting the readiness to adopt PBBS in the Libyan higher learning institutions. Other variables including satisfaction with Line-Items (SL), organisational support (OS), training (TR) and barriers to adoption (BA) played significant roles in predicting the readiness to adopt PBBS. The barriers to the adoption variable as well as the satisfaction with Line-Item budgeting system were seen to have negative and significant relationships with the readiness to adopt PBBS. The rest of the variables were positively contributing to the readiness to adopt PBBS.

Table 4-15: Summary of Multiple Regression Results for Model 1

Variable	Coefficient b	Standardized Coefficient	t-value	R^2	Adjusted R^2	F-value
Constant	3.61		10.16	0.15	0.14	12.77**
RA	0.00	0.00	0.01			
TA	0.05	0.11	2.50			
SL	-0.20	-0.20**	-4.28			
BA	-0.11	-0.12*	-2.43			
OS	0.18	0.19**	3.97			
TR	0.11	0.13*	2.75			

** Significant at $\alpha < 0.01$ level; * Significant at $\alpha < 0.05$.
Dependent Variable: Readiness to adopt PBBS

Table 4-16 presents the summary of hypotheses testing results for the integrated model. The hypothesised relationship between RA and readiness to adopt PBBS was not supported. This indicated that RA had no significant influence on the readiness to adopt PBBS. Similarly, it was demonstrated that TA had influence on the readiness to adopt PBBS. By supporting H3, the data demonstrated that SL reduced the level of readiness to adopt PBBS the new system being proposed (PBBS). A similar influence was noted in the link between BA and readiness of PBBS adoption as the hypothesised

relationship was confirmed to prevail (H4 was supported). OS was seen to influence the readiness to adopt PBBS as confirmed by the support on H5. Similarly, TR influenced the readiness to adopt PBBS positively as the results showed support for H6. The results narrowed down the number of factors that played the key roles in influencing the readiness level to adopt PBBS to four (4) variables only (i.e. SL, BA, OS and TR).

Table 4-16: Results of Hypothesis Testing for the Integrated Model

Link	Hypothesis	Coefficient b (t-value)	Remarks
RA→PBBS	H1 There is positive relationship between Relative Advantage and the readiness to adopt PBBS	0.00 (0.01)	H1 Not Supported
TA→PBBS	H2 There is positive relationship between Tolerance for Ambiguity and the readiness to adopt PBBS	0.11 (2.49)	H2 Supported
SL→PBBS	H3 There is negative relationship between Satisfaction with Line items and the readiness to adopt PBBS	-0.20** (-4.28)	H3 Supported
BA→PBBS	H4There is negative relationship between Barriers and the readiness to adopt PBBS	-0.12* (-2.43)	H4 Supported
OS→PBBS	H5 There is positive relationship between organizational Support and the readiness to adopt PBBS	0.19** (3.97)	H5 Supported
TR→PBBS	H6 There is positive relationship between Training and the readiness to adopt PBBS	0.13* (2.75)	H6 Supported

** Significant at $\alpha < 0.01$ level; * Significant at $\alpha < 0.05$.

The model indicated that three major independent variables namely satisfaction with the current system of Line-Item (SL), perceived barriers (BA) , organisational support (OS) and training (TR) would be the better combination of components that explained the greatest amount of variance in determining the level of readiness to adopt PBBS in the Integrated Model version testing.

The significance of the model is that when all components were considered for integrated relationship identification or integrated model development, the above combination or regression equation might be the most meaningful and useful predictor set for forecasting and estimating the willingness of adopting any new system among the targeted respondents.

5.5.3 Effects of the Moderator Variable Attitude Towards Change

Baron and Kenny (1986, p. 1174) describe a moderator as "a qualitative or quantitative variable that affects the direction and/or strength of the relationship between an independent or predictor variable and a dependent or criterion variable". In other words, a moderator influences the relationship between a criterion and the predictor variables by acting to reduce the magnitude and/or to reverse the direction of the relationship between these variables. Four categories of moderators are identified by Sharma et al. (1981) which include those that can be predictors, homologisers, pure moderators and quasi moderators.

The first type i.e. the predictor is related to the criterion and/or predictor variable such that is not considered a moderator variable. The predictor is also labelled as being intervening, antecedent, exogenous or a suppressor. The homologiser, however, is not related to the predictor and does not show any significant relationship with a predictor or criterion. This variable, however, plays a role in influencing the strength of the relationship between the predictor and the criterion. A pure moderator changes or modifies the form of the relationship between the predictor and criterion variables. This kind of moderator shows some interaction with the predictor variable although it is not a predictor itself. It also modifies the form of relationship between the predictor and criterion variables. Although it shows some interactions with the predictor variable, it is not related to the criterion variable. In this study, the moderator 'attitude towards change' (ATC) was considered to be a pure moderator due to its relationship with the variable 'readiness to adopt PBBS' (**Table 4-11**).

The analysis of the moderation effect suggested by Baron and Kenny (1986) considered relationship depicted in Figure 5.2, which shows the moderator model. The model has three causal paths that feed into the outcome variable: the impact of the predictor (Path a), the impact of the moderator (Path b) and the interaction of the two (Path c).

According to the authors above, the moderator hypothesis is supported if the interaction (Path c) is significant. The existence of the significant main effect for the predictor and the moderator (Paths a and b) was of no direct relevance conceptually to testing the moderator hypothesis.

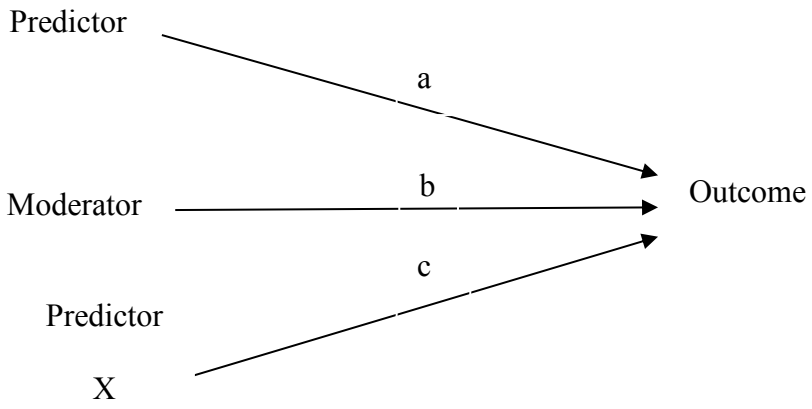

Figure 4-2: Moderator Model

In this study, the moderator variable was treated as a continuous variable, similar to how the other study variables have been treated in earlier analyses. A suggestion by Baron and Kenny (1986) is that when a moderator is a continuous variable, one may use hierarchical regression in conducting the test for moderator effect. The dependent variable has to be regressed on the independent variables, the moderator variable and the cross product of the independent and moderator variables. To accomplish this procedure in this study, Models 1, 2 and 3 were used. Model 1 was used to test hypotheses as an integrated model in the previous section. Models 2 and 3 are presented below. The results of the test are shown in **Table 4-15**.

Model 2:

$$PBBS = \alpha_0 + \beta_1 RA + \beta_2 TA + \beta_3 SL + \beta_4 BA + \beta_5 OS + \beta_6 TR + \beta_7 ATC + V_1$$

Where:

PBBS = the readiness to adopt PBBS

RA = Relative Advantage

TA = Tolerance for Ambiguity

SL = Satisfaction with Line Items

BA = Barriers to Adoption

OS = Organizational Support

TR = Training

ATC = Attitude towards Change

α_0 = Regression Constant

β_1 = Regression Coefficient

ν_i = Error Term

Model 3:

$$PBBS=\alpha_0+\beta_1 RA+\beta_2 TA+\beta_3 SL+\beta_4 BA+\beta_5 OS+\ \beta_6 TR+\beta_7 ATC+\beta_8 RA^{*}+ATC+\beta_9 TA^{*}ATC+V_i$$

Where: PBBS = the readiness to adopt PBBS

RA = Relative Advantage

TA = Tolerance for Ambiguity

SL = Satisfaction with Line Items

BA = Barriers to Adoption

OS = Organizational Support

TR = Training

ATC = Attitude towards Change

RA*ATC = Moderator Interaction of attitude towards change and relative advantage.

TA*ATC = Moderator Interaction of attitude towards change and tolerance for ambiguity

α_0 = Regression Constant

β_1 = Regression Coefficient for X_i

ν_i = Error Term

Model 3 was estimated in four different stages. The reason behind the four estimations was to avoid the multicollinearity trap that might occur when including the attitude towards change, relative advantage and tolerance for ambiguity as independent variables as well as moderating variables. Therefore, the first estimation would not include the moderating effect of attitude towards change with either relative advantage or tolerance ambiguity. The second estimation will not include relative advantage and attitudes towards change as independent variables. The third estimate does not include the tolerance for ambiguity and attitude towards change as independent variables. The model would not also include attitude towards change, tolerance for ambiguity and relative advantage as independent variables but would include the moderating effect of attitude towards change with both relative advantage and tolerance for ambiguity. In addition, the first model reported in **Table 4-11** would be included here for comparison purposes.

Table 4-17: The Moderating Effect of Attitude towards Change on Tolerance for Ambiguity and Relative Advantage

Variables	Model 1	Model 2	Model 3		
		Stage1	Stage 1	Stage 2	Stage 3
	beta	beta	beta	beta	beta
RA	0.00	0.00	----------	-0.00	----------
TA	0.11*	0.13**	0.11*	----------	----------
SL	-0.20**	-0.17**	-0.17**	-0.20**	-0.17**
BA	-0.12*	-0.06	-0.07	-0.11*	-0.07
OS	0.19**	0.16**	0.14**	0.19**	0.15**
TR	0.13*	0.13**	0.13**	0.13**	0.13**
ATC	----------	0.20**	--------	----------	----------
RA x ATC	----------	----------	0.17**	----------	0.14**
TA x ATC	----------	----------	--------	0.15**	0.13**
R^2	0.15	0.17	0.17	0.16	0.18
Adj. R^2	0.14	0.17	0.16	0.15	0.16
F-value	12.77	13.84	14.82	13.66	15.13
Sig. F Change	0.00	0.00	0.00	0.00	0.00

** Significant at $\alpha < 0.01$ level; * Significant at $\alpha < 0.05$; $^{+}$ Significant at $\alpha < 0.10$.

Table 4-17 reports the estimation for Model 1 and a different estimation for Model 3. The rationale for estimating Model 3 in difference stages was twofold. First, it was to

capture the moderating effect of each moderating variables on readiness to adopt PBBS. Second, as mentioned before, it was to avoid the multicollinearity problem when including the independent variable among the moderating variables. The simple correlation results testing the relationship between relative advantages, tolerance for ambiguity with the moderating effect of attitude towards change was 0.78 and 0.97, respectively. This indicated that there was a multicollinearity problem existing between the variables.

The results in **Table 4-17** were as follows. In Model 1, it was clear that all the variables were significant and had the predicted sign except for relative advantage, which was not significant. In stage 1 of Model 2, the attitude towards change was included in the assessment. Relative advantage and barriers were not significant but the other independent variables were significant and had the correct sign. Moving on to stage 1 of Model 3, the relative advantage and attitudes towards change were not included but the moderating effect of attitude towards change with relative advantage was included to test the moderating effect. The results showed that all the independent variables and the moderating effect were significant and had the correct sign except the 'barriers' variable.

The results of the significance of the moderating effects led to the conclusion that attitude towards change strengthened the relationship between relative advantage (which was not significant as an independent variable) and the readiness to adopt PBBS. Therefore, unless there was a positive attitude towards change, the relative advantage of the new system would not encourage the willingness of the new system adoption. Similarly, stage 2 of Model 3 excluded attitude towards change and the tolerance for ambiguity as independent variables but included the moderating effect of attitude towards change with tolerance for ambiguity to test the moderating effect. The results suggested that all the independent variables were significant and had the correct signs.

In addition, the moderating effect of attitude towards change was significant and positive. Since tolerance for ambiguity was significant in Model 1 and the moderating effect was significant in stage 3 of Model 3, this led to the conclusion that with a positive attitude towards change or without the higher tolerance for ambiguity, there is a higher chance of accepting the new system. The result of the significant moderating effect led to the acceptance of the moderating effect hypothesis (H8). The last stage of Model 3 was to test the dual moderating effect on the readiness to adopt PBBS. Therefore, attitude towards change, tolerance for ambiguity and relative advantage were not included in this stage. The results indicated that all the independent variables included were significant except the barriers variable. In addition, the moderating effect of attitude towards change with tolerance for ambiguity and relative advantage were significant with the predicted directions. This indicated that the attitude towards change had a strong effect on the relationship between relative advantage and the readiness to adopt PBBS. However, in the case of tolerance for ambiguity, the results of the independent variable were significant in all tests whenever they were included. Moreover, when the moderating effect was included, tolerance for ambiguity was still significant and had the correct sign.

For the goodness of fit, the R^2 and the F-value were included for each model. The R^2 ranged between 15 percent and 18 percent, which was considered to indicate a good model. This meant that all the independent variables and the moderating effect explained 15-18 percent of the variation of the readiness to adopt PBBS. The F-value in all the cases were significant, indicating that the model was considered to be good fit and supportive of the results of R^2.

The various models indicated that interchangeably, several combinations of independent variables as shown in **Table 4-17** namely tolerance to ambiguity (TA), satisfaction with the current system of Line-Item (SL), perceived barriers (BA), organisational support

(OS) and training (TR) would be the better combination of components that explains the greatest amount of variance in determining the level of readiness to adopt PBBS in the Moderator Model version testing.

The significance of the model is that when all components were considered for moderator relationship identification or moderator model development, the above combination or regression equation might be the most meaningful and useful predictor set for forecasting and estimating the readiness to adopt PBBS in any new system among the targeted respondents.

5.6 Interview Results

The researcher conducted an interview regarding two main issues under study, namely the line item system currently in use in the organizations and the performance based budgeting system (PBBS). The interview was conducted following a protocol that was developed for the purpose of guiding the interviewer and maintaining the consistency in the issues to be focused on. Also the protocol was used as a tool to enhance the reliability of the results from the interview. The protocol consisted of nineteen guiding questions as seen in **Table 4-18** through **Table 4-19**; where questions one to five concerns the line item system in use and questions seven to nineteen have a focus on the performance based budgeting system.

The interviewees were from the institutions of higher learning in Libya. These included eight Universities where two interviewees (a user and a decision maker) from each organization participated in the interview. Also three interviewees formed the policy making bodies (Ministry of Higher Education in Libya and the Prime Minister's Office) who were among those who participated in this interview. In total nineteen people were interviewed (Eight Vice Chancellors, Eight Heads of Finance Departments or Directorates in the study organizations, and the three interviewees for policy making bodies). The interviews took place in the work place of each interviewee and each lasted

between twenty five to thirty minutes. The responses were categorized into three groups that included responses from users (accountants, heads of finance departments, or directors of finance), responses from decision makers (vice chancellors or other administrators), and responses from people from policy making institutions (Ministry of Higher Education and Prime Minister's Office in Libya).

5.6.1 Results From User Respondents

The responses from the users presented in **Table 4-18**, show that they are not satisfied with the line item system as it does not let the institutions achieve all their set goals. These respondents were of the opinion that the budgeting system needs to be changed. The expectations from the anticipated change include improvement in efficiency and service provision. In preparing their budgets, the institutions start at the department level, then get the proposed budget through the faculty or department, which then gets sent to the vice chancellor or the director of the institution, who will then seat with the budget committee to consolidate the budget for the whole institution. The consolidated budget proposal is sent for further refinement and approval at the Ministry of Higher Education.

Regarding the PBBS, users seem to be well aware of the existence of this budgeting system. The respondents have differing views on whether the institutions are ready to change to the new system or not. Those who believe the institutions are ready for the change, think that it can be implemented in their institutions although they see some barriers in implementing the new system. These barriers include: human capital and skills of the accounting and administration people, the cost of implementing the new system and acceptance of the new system by the people, as well as lack of support from shareholders/ government. The respondents also believed that for the system to be implemented successfully it is necessary to have top management support, relevant needed human capital, positive attitude of the employees towards the new system, and

support from the government. They suggest that the implementation of the new system be done in parallel to the existing one for a smooth transition from the old system to the new one. As most of the institutions indicate to have management information systems in use, and enough computers with trained employees, the implementation of the new system is possible in these study institutions. The existence of strategic planning systems in all study institutions further encourages the readiness of implementation of PBBS as it can be accommodated easily in these institutions' plan in the coming 5 years. A much detailed account of the responses is as presented in **Table 4-18**.

Table 4-18: Results from the Interview Responses: Users of the budgeting System

Question	Responses from Users
1. Could you please explain the budgeting system process in your organization?	Departments prepare the budget then send to the faculty, thereafter to the University level (Committee of Deans & Vice Chancellor) for approval, after which it is sent to the Ministry of Higher Education for improvement
2. Does Line-item system help you to achieve your organization's objective and what strengthens and weakness of Line-items budgeting method?	Most of interviewees said that So far this system achieves some of our objectives, but we use it because we do not have any other system to use. We need to make our university more competitive advantageous, so an improvement is necessary. This is a weak system because it focuses on inputs and ignore the outputs, results therefore no accountability and transparency.
3. Are you satisfied with Line-item system which you use now? If No then why?	Most of the interviewees said that they are not satisfied with Line-item system currently in use because the line item system is so old, and it is does not achieve our objectives beside that it is not an effective and efficient system but there is no other alternative at the moment.
4. Do you think that the current system should be changed? If Yes then Why?	- Most users said that the current system should be changed because it is not helping the university to achieve all its objectives and financial performance. -Our University has the ambition to use the new system and developed our budgeting system; however the change should be gradual and implemented step by step.
5. What change do you expect?	The interviewees' expectation that the new system PBBS will help their universities to improved effectiveness and efficiency in the financial performance.
6. Do you think the changes will be useful for your organization?	Depending on the new system: if the system is good then the University will get some benefits and improvements in the budgeting system from this change therefore provide accountability and transparency.

Table 5 17: Continued

7. Have you heard about performance based budgeting system (PBBS)?	-All of the interviewees said Yes, I have heard about this system and I read about it as well. - I heard some countries adopted and continue to implement it successfully such as New Zealand and Australia
8. Are you going to support the change in your organization in terms of PBBS?	Most of interviewees will be glad for any positive and supported change so definitely all of them will be strong support for this change therefore we will support PBBS adoption and implementation in our universities.
9. Do you think the new system (PBBS) is easy to implement?	- Most of interviewees think that this system can be implemented and it is not difficult to implement. -Any new system for the first time it is seen not to be easy to change to because it needs resources and human capital qualification. -There is a need for commitment on the part of management and employees in adopting this new system
10. Do you intend to adopt performance based budgeting system (PBBS)?	Most of users said yes, that the university has the intensions to change from the old system to a new one (PBBS).
11. In your opinion this University is ready to adopt PBBS? If yes why?	I think the University is not ready to implement PBBS now. So, if it has to adopt PBBS, initially it should be done gradually and in parallel with the line –item system. .
12. What are the barriers that will encounter the adoption of PBBS?	Human capital and skills of the accounting and administration people, besides the cost of the system and acceptance of the new system by the people, lack of support from shareholders.
13. Are there factors in your University that you think will assist in adopting PBBS?	Top management support, Human capital, Attitude of the employees towards the new system, and support from the Ministry of Higher Education.
14. Do you think the PBBS can help your University achieve its objectives?	Yes, the system will help the University to achieve their objectives because this system has a focus on the objectives and links the input and output.
15. Is the decision to adopt new system is done by your University or other decision makers?	-The decision will be made by the higher Education Ministry because it is responsible for all the Universities and higher learning Institutions. -Shareholders also play a role in the decision making process (non-university institutions).
16. What do you suggest should be done in order to improve budgeting system in your organization?	-Go PBBS in parallel with Line-item system. - Make sub-budget for each program and see what can be done by the new program while maintaining the old system. -Allow employees to participate in the budgeting process.
17. Does this University have a Management accounting information system?	Yes the University has a Management information system so any information can be retrieved electronically (e.g. information about the cost and salary of the employees so on).
18. Does this University have a strategic planning system? If yes, can you explain the strategic planning process?	The university has a strategic planning system where plans are for 5 years regarding issues such as opening of new department or new faculty and expansion.
19. Is your University having enough computers and provides training programs?	Yes, the university has enough computers and training for employees is done on regular basis on how to use. The universities should organize seminars ,workshop besides that training employees locally and internationally

5.6.2 Results from Decision Makers

The eleven interviewees who are decision makers are mostly the Vice Chancellors of study universities or the Directors of High Learning Institutes in the study. These respondents are the ones who make sure the final approvals of the budgets for their institutions are completed. Thus after the initial preparations in departments are completed, they seat in the committee that consolidates the departmental budgets, and take it further to the ministry for approval. They believe that the current system is not sufficient to make their organizations achieve all their set goals. These respondents see the current budgeting system to be old and not compatible with the current developments experienced in their institutions, thus they think a change to a new budgeting system is necessary. Their expectations in the change of system include improvement in efficiency and effectiveness as well as service provision.

Regarding PBBS, most of these decision makers have no background in accounting, so they indicated not being aware of the existence of PBBS, although they believe it may be a better option compared to the current line item system that is in use in their institutions. These respondents also have differing views on whether the institutions are ready to adopt the new system or not. Those who believe the institutions are ready for the change, think that it can be implemented in their institutions but they see some barriers in implementing the new system. These barriers are similar to those identified by the user respondents. They include: human capital and skills of the accounting and administration people, the cost of implementing the new system and acceptance of the new system by the people, as well as lack of support from shareholders/ government. The respondents also believe that a successful implementation of the new system requires the institutions to have top management support, relevant needed human capital, positive attitude of the employees towards the new system, and support from the government.

Similar to the previous group of respondents, the decision makers also suggest that the implementation of the new system can be done in parallel to the existing one for a smooth transition from the old system to the new one. All respondents indicated that their institutions were well equipped with computers and had well trained staff in terms of computer use. Each of the study institutions indicated to have a well-established management information system that is already in use. More details on the responses of the decision makers are presented in **Table 4-19**.

Table 4-19: Results from the Interview Responses: Decision Makers

Question	Responses from Decision Makers
1. Could you please explain the budgeting system process in your organization?	Departments prepare the budget then send to the faculty, thereafter to the University or institutional level (Committee of Deans & Vice Chancellor / Director of the institute) for approval, after which it is sent to the Ministry of Higher Education or shareholders for improvement
2. Does Line-item system help you to achieve your organization's objective and what strengthens and weakness of Line-items budgeting method?	Most of interviewees said that, So far this system achieves just part of our objectives; however it is not a strong system that achieves all our objectives. We continue to use it because we do not have any other system to replace it. However we need another system that can help us to improve our financial performance.
3. Are you satisfied with Line-item system which you use now? If No then why?	Not satisfied with the Line-item system which is currently in use as it is too old and cannot accommodate new ways of working that are dynamic.
4. Do you think that the current system should be changed? If Yes then Why?	-The current system should be changed because it is not helping the university to achieve all its objectives and financial performance. -Our University has ambition to use a new system and develop our budgeting system to be able to achieve all objectives; however it is preferred to change gradually and step by step. - Always we hope to change to new things that can help us to improve and develop our quality of services and financial objectives so if we find new system can help us to improve our University budget then we can change.
5. What change do you expect?	Most of interviewees' expectation in positive way that the change will bring a lot of benefit for universities so will be more effectiveness and efficiency in the financial performance and high quality of services as well as achievement of all objectives.
6. Do you think the changes will be useful for your organization?	Depending on the new system: if the system is good then the University will get some benefits and improvement in the budgeting system from this change. Only after implementing it can we see the actual benefits.
7. Have you heard about performance based budgeting system (PBBS)?	No idea about this system because I do not have background in Accounting.
8. Are you going to support the change in your organization in terms of PBBS?	Any positive change will be supported, it so definitely I will be strong support for this change therefore I will support PBBS adoption and implementation.

Table 5 18: Continued

9. Do you think the new system (PBBS) is easy to implement?	- I do not know about the system so I can see it is easy to implement but I think for professional accountants it is not difficult. -Any new system is not easy to adopt and implement because it needs finical resources and qualified personnel e.g. in accounting and finance. I think this system can be implemented and it is not difficult to implement.
10. Do you intend to adopt planning programming budgeting system (PBBS)?	Yes, the university has intensions to change from the old system to a new one (PBBS).
11. In your opinion this University is ready to adopt PBBS? If yes why?	-I think the University is not ready to implement PBBS now so the preference is initially to adopt it parallel to the Line-item system. - Yes the university is ready to adopt PBBS because it has the ability to do that and has the necessary resources (financial capability, human capital and technology).
12. What are the barriers that will encounter the adoption of PBBS?	Human capital and skills of the accounting and administration people, besides that the cost of the system and acceptance of the new system by the people, lack of support from shareholders and lack of government support.
13. Are there factors in your University that you think will assist in adopting PBBS?	Most interviewees mentioned that top management support, Human capital, Attitude of the employees towards the new system, and support from the Ministry of Higher Education are most important factors for assistance of PBBS adoption.
14. Do you think the PBBS can help your University achieve its objectives?	I am certain the system will help the University to achieve the objectives because this system has a focus on the objectives and links the input and output.
15. Is the decision to adopt new system is done by your University or other decision makers?	The decision will be made by the higher Education Ministry because it is responsible for all the Universities and higher learning Institutions.
16. What do you suggest should be done in order to improve budgeting system in your organization?	-The university should adopt and implement both systems, the PBBS and Line-item together. -Make sub-budget for each program and see what can be done by the new program while maintaining the old system. -Allow employees to participate in the budgeting process.
17. Does this University have a Management accounting information system?	Yes the University has a Management information system so any information can be retrieved electronically (e.g. information about the cost and salary of the employees so on).
18. Does this University have a strategic planning system? If yes, can you explain the strategic planning process?	The university has a strategic planning system where the plans are for 3 to 5 years regarding issues such as opening of new department or new faculty and expansion. We have plane to Cooperation with international universities.
19. Is your University having enough computers and provides training programs?	All of interviewees said that yes the university has enough computers and it has trained some employees on how to use them. Also the university has a training program for all the employees at the University.

5.6.3 Results from Policy Making Respondents

These respondents are those who work in the government (Ministry of Higher Education and Office of the Prime Minister). They acknowledge the process of approval of budgets from the higher learning institutions through their organizations. The respondents note that the current line item budgeting system to be insufficient in trying

to meet all set goals, although most of them were satisfied with the performance of the old system due to its simplicity in its use and there being no other alternative system. However, the respondents believe that there is a need for changing the system, expecting to have improvements in performance as well as service provision level.

On PBBS some of these respondents already heard about its existence and use, while some are completely ignorant of this system. Adopting the new system (PBBS) is one option for the institutions and the government to be able to achieve all set goals as the new system has a focus on inputs and outputs. They believe that any new system is not easy to adopt and implement because it needs finical resources and qualified personnel e.g. in accounting and finance, but they think that the new system can be implemented and it is not difficult to implement. The respondents identified some barriers to the adoption of the new system, which include: human capital and skills of the accounting and administration people, besides that the cost of the system and acceptance of the new system by the people, lack of support from shareholders and lack of government support. Despite the barriers seen by the respondents, they still believe that the adoption of the new system is possible as the required resources in terms of human capital and finances are available to start with. The new system may be adopted in parallel with the current line item system at the beginning. Most institutions are well equipped with computers and trained staffs that also run the management information systems in these institutions. More details on the responses of these respondents from the policy making bodies are presented in **Table 4-20**.

Table 4-20: Results from the Interview Responses: Policy Making Institutions

Question	Responses from Decision Makers
1. Could you please explain the budgeting system process in your organization?	Most of the interviewees explain the budget processes in their universities as Each Institution prepares their budget then sends it to Ministry of Higher Education for the discussion with the Minister after that get improvement.
2. Does Line-item system help you to achieve your organization's objective and what strengthens and weakness of Line-items budgeting method?	Most of interviewees said that So far line-item system which they use now achieves just part of the objectives; we continue using it because we do not have any other system to replace it. However we need a system that can help us to improve our financial performance. The line item is not strong and suitable system because there is no link between inputs and outputs or the results and performance, and focus on the expenditures. In other hand the current system help us to achieve control of the expenditure and our financial plan
3. Are you satisfied with Line-item system which you use now? If No then why?	So far we are satisfied with the system because this system does not achieves our objectives and ignore the performance of the financial but because it is easy to use and it has been in use for a long time and beside that we do not have other system to try.
4. Do you think that the current system should be changed? If Yes then Why?	Yes because it is not strong and effective system so always we hope to change to new thing that can help us to improve and developed our quality of services and financial performance and objectives so if we find a new system can help us to improve our financial performance and institutional budget then we can change. Moreover most of employees like change from time to time
5. What change do you expect?	Most of the interviewees are optimists and hopeful about change and their expectations that the new system PBBS will be more effective and efficient in the financial performance therefore will help the universities to provide high quality of services as well as achievement of all universities objectives and goals.
6. Do you think the changes will be useful for your organization?	Most of interviewees, said that depending on the new system: if the system is good then the University will get some benefits and improvement in the budgeting system from this change. Only after implementing it can we see the actual benefits.
7. Have you heard about planning programming budgeting system (PBBS)?	Some have no idea about this system because they do not have background in accounting, while those from the accounting field do have idea about PBBS and claim to be aware that it was in use in some places.
8. Are you going to support the change in your organization in terms of PBBS?	Most of interviews specially the decision maker will be supported, any positive change it so definitely we will be strong supporters for this change therefore we will support PBBS adoption and implementation with the hope of increasing, effectiveness, efficiency and service level by institutions under the ministry..
9. Do you think the new system (PBBS) is easy to implement?	Most of interviews said that new idea is not easy to accept it for first time. Any new system is not easy to adopt and implement because it needs finical resources and qualified personnel e.g. in accounting and finance. I think this system can be implemented because we have the financial resources and human capital however sometimes it is not easy to adopt and implement it specially in the binging
10. Do you intend to adopt planning programming budgeting system (PBBS)?	Yes, the Ministry has intensions to change from the old system to a new one (PBBS) especially if the change brings benefits for our universities.
11. In your opinion is the Ministry is ready to adopt PBBS? If yes why?	- Yes the Ministry is ready to adopt PBBS because it has the ability to do that and has the necessary resources (financial capability, human capital and technology).
12. What are the barriers that will encounter the adoption of PBBS?	Most of interviewees said that Human capital, skills of the accounting and administration people, besides that the cost of the system and acceptance and employees reaction of the new system, lack of support from shareholders, top management and lack of government support are the barriers.

Table 5 19: Results

13. Are there factors in your University that you think will assist in adopting PBBS?	Top management support, Human capital, Attitude of the employees towards the new system, and support from the Government.
14. Do you think the PBBS can help you're the Ministry and its institutions achieve their objectives?	Most of the interviewees said that certain systems will help the Ministry and its institutions achieve their set objectives because this system has a focus on the objectives and results, moreover it makes links between input and output therefore the universities can make good financial and non-financial performance.
15. Is the decision to adopt new system is done by your ministry or other decision makers?	The decision to adopt the new system will be made by the Prime Minister because he is responsible for Government institutions.
16. What do you suggest should be done in order to improve budgeting system in your organization?	-The ministry should adopt and implement both systems, the PBBS and Line-item together. -Make a sub-budget for each program and see what can be done by the new program while maintaining the old system. -Allow employees to participate in the budgeting process.
17. Does this ministry have a Management accounting information system?	Yes the ministry has a Management information system so any information can be retrieved electronically (e.g. information about the cost and salary of the employees so on).
18. Does this ministry have a strategic planning system? If yes, can you explain the strategic planning process?	The ministry has a strategic planning system where plans are for 5 years regarding issues such as creating a new ministry of department.
19. Is your University having enough computers and provides training programs?	Yes the ministry has enough computers and it has trained some employees on how to use them. Also there is a training program for all the employees at the University. Most of the interviewees said that the training is very important to adopted and implemented the performance based budgeting PBB in the Universities and the universities have the financial resources to organizing training programs for Accounts and financers inside Libya and overseas as well. Besides that the staff teaching that has a PHD or master in the field of accounting, financial and computers will be ready to manage workshop training for the financial and accounting departments of universities.

5.6.4 Comparison of the Results for the Three Categories of Respondents

The three categories of respondents do show similarities in almost all responses. They are all not satisfied with the current budgeting system (line item) due to its failure to achieve all objectives set in the budget. The change in system, they believe, will bring about improvement in performance as well as efficiency and effectiveness in service provision. They all have a positive attitude towards the adoption of the new budgeting system (PBBS), and are eager to support its implementation. The readiness of implementing seems to be high as all institutions are well equipped with computers and they have well trained people who currently are manning the management information systems in these institutions.

To sum it up, there is a high indication that PBBS adoption will be positively received in the higher learning institutions of Libya. Only that the institutions have no authority to decide on the implementation of the new system. The authority lies with the Prime Minister.

5.7 Discussion of the Key Research Findings

Following the lifting of the UN Security Council sanctions on Libya in 1999, the country has moved towards using the efficiency concept and techniques to improve the productivity of government based organisations. One of which was launching financial reforms to improve the public budgeting system, which was currently being operating under the Line-Item approach.

How to adopt the new system and replace the old system are two major concerns of the Libyan government. Exploring the problems associated with the adoption of diffusion of the PBBS in different countries using a scientific method and comparing themes with the Libyan case is of high interest to this study. Also, it is hoped that it will assist the government by reducing the risk in adopting the new budgeting system and contribute to the effective diffusion of PBBS.

The adoption of the new budgeting system has three focuses: the experiential, vicarious and feedback learning. The combination of an effective experiential and vicarious programme, clear feedback loops can have a considerable impact on potential end users. The combination would make potential end users become more effective and competent with the new budgeting system. The change caused by the adoption and implementation in the organisation affected not only the budgeting system, but also the business

processes of the organisation. The changes resulting from the adoption of the budgeting method have to be cautiously managed and communicated, before, through and after adoption in order for the benefits of these systems to be reaped by the agency and organisation, as new budgeting method implementation encompasses many different areas in the organizations.

Diffusion of innovation is defined as a social process by which information about the innovation is communicated over time to reduce its risk of adoption. Thus, diffusion is driven by uncertainty reduction behaviour among potential adopters. Research studies have examined factors that contribute to successful implementation of an innovation (Markee, 1994; Rogers, 1995; Golun & Johnson, 1996; Whitten & Collins, 1997; Beaumaster, 1999; Matey, 2002). Compatibility, complexity, relative advantage, newness, potential adopters, communication channels, internal and external networks are among the different factors discussed (Greengard, 1998, Rogers, 1983, Irvine & Elisa, 2004; Swan & Newell, 1995). The following is a brief discussion of the study results.

The models have been estimated, with various combinations of independent variables being identified to play concerted roles in establishing and explaining the greatest variance of the levels of readiness to adopt PBBS. These models might be useful in forecasting or estimating future or prospective responses towards adopting a new system, in particular PBBS accounting system in the case study.

The main findings of the research were that models developed were based on empirical evidence presented by the case study. Questionnaire and interview methods selected were the most appropriate methods to extract the valid and reliable information regarding the factors influencing and their respective strength in explaining the variation

of the responses towards prospective adoption of the new PBBS accounting system in the Libyan higher learning institutions.

Additionally, the other key research finding was that these models might assist in anticipating, forecasting and minimising the risks and costs associated with future adoption of any new technology or technical advancement among non-adopters. Hence, detection and prevention of unfamiliarity, uneasiness and resistance to these new adoptions might be addressed, mitigated and remedied in the earliest possible stages of adoption. In doing so, costs, risks, uncertainties and potential threats can be minimised or even ameliorated altogether, thus, increasing the potential benefits, assuring smooth transition and ensuring higher success rates of financial reforms and/or new system adoption.

The research findings might potentially assist decision and policy makers in anticipating and estimating the advantages and revenues generated from the new adoption, in justifying any changes in investment strategies or policy directions.

5.7.1 Relative Advantage and Readiness to Adopt PBBS

The perception of relative advantage was measured by using 10-item instrument adapted from Tayib and Rosli (2003). The respondents were asked to rate their agreement to the statements, on a scale of 1 (strongly disagree) to 5 (strongly agree). Findings from the survey showed a positive relationship between the relative advantages and the readiness to adopt PBBS however the interviews showed that most of policy making decision makers and users heard about this system advantages and disadvantages. The results showed that relative advantage (RA) played no role in predicting the readiness to adopt PBBS with the presence of other independent variables. However, if relative advantage and its relation with readiness to adopt PBBS

were re-examined without the presence of other variables in the mode, then the positive relationship between the two variables was observed. This was because a new system would have some relative advantages that were not available in the old system. Since a new system usually solves the problems and the shortcomings of the old system, it is expected that the new system would have certain advantages over the previous one.

This finding contradicted what has been indicated by Rogers (1995) and Thronatzky and Klein (1982) who had found no significant relationship between relative advantage and the adoption of PBBS except in the bivariate relationship. Rogers (1995) considers 'image' as an important aspect of relative advantage. Image is defined as "the degree to which use of innovation is perceived to enhance one's image or status in one's social system" (Moore & Benbasat, 1996). It was stated by Rogers (1995) that "One motivation for many individuals to adopt an innovation is the desire to gain social status." In addition to that, it is also not supported by the findings of other diffusion research that relative advantage may often be an important determinant of an innovation rate of adoption. This indicates that when all the variables are included, the other variables seem to take the effect of the relative advantage on adoption

One possible explanation was that the new system of PBBS has yet to be fully introduced, let alone implemented in the organisations surveyed. Using the case study's empiricism, where non-adopters were selected as sample, the only comparison made or relative advantages to be set against PBBS was the Line-Item system. If these respondents have been used to the current system, it would be a challenge to foresee the relative advantages of PBBS in the absence of practicing and implementing the new system within their respective organisations. Furthermore, relative advantage was difficult to measure since reform as such presented and discussed in literature, has not been experienced first-hand by the respondents, given the political and socio-economic

situation in Libya. Hence, in this research it was found that relative advantage played no significant role in determining the level of readiness to adopt PBBS among Libyan higher institutions.

5.7.2 Organisational Support and Readiness to Adopt PBBS

Top management support and organisational researchers working from a variety of perspectives have identified that employees in an organisation were affected by how they perceived the management supporting the adoption and practices associated with implementing a new system (Scott & Bruce, 1994; Rynes & Rosen, 1995; Brandyberry et al., 1999); Howard, 1999). Drawing from literature, support of top management and resources support were both included in this study to capture the individual's perception of organisational support for learning. The construct was measured using four items of management support advocated by Jarvernpaa and Lves (1991) and Gagnon and Toulouse (1996). Results from both quantitative and qualitative parts of this research showed that top management support was one of the significant factors in determining the readiness to adopt PBBS. Support of top management refers to the level to which efforts are promoted by the support of top corporate management of an organisation. The significance of support of top management during implementation and adoption of new systems is broadly accepted in the literature. Both practitioners and researchers have asserted the importance of support of top management and resources for the implementation and adoption of new techniques. Major suggestions in this respect include: obtaining commitment and obligation from a number of top management and secure backing from politically senior executives (Buchholtz & Ribbens, 1994; Gagnon & Toulouse, 1996; Greengard, 1998; Young et el., 2001; Matey, 2002).

The current research findings are aligned with the previous findings. Most literature supported that leaders being supportive of their subordinates influenced the

innovativeness of subordinates (Buchholtz & Ribbens, 1994; Gagnon & Toulouse, 1996; Greengard, 1998; Howard, 1999). A similar concept was articulated by Camprion et al. (1993) and Scott and Bruce (1994), in their studies of Research and Development department employees, which found that top managerial support has been positively related to individual innovative behaviour.

Support of top management level is vital and important for the future adoption of PBBS. Potential adopters of PBBS ought to consider getting hold of support and commitment from organisations to reduce the resistance and ensure sufficient allocation of resources for the smooth adoption of the new system. The more support given by top management, the more likely resources of organisations will be allocated to the implementation of innovation decisions, which in turn, facilitates the adoption and success of an innovation. These findings indicated that the respondents' perceived organisational support as an important determinant to increase readiness to adopt PBBS. These findings also showed a similar outcome to previous studies in terms of the relationship between the organisational support and the readiness to adopt a new system.

5.7.3 Satisfaction with Line-item System and Readiness to Adopt PBBS

The Line-Item budgeting system is defined as "a financial plan of estimated expenditure expressed in terms of the kind and quantity of objects to be purchased and the estimated revenue needed to finance them during a specific period, usually one year (Olive, 1999, page number to insert). Oliver (1999) also defined satisfaction as the perception of an enjoyable accomplishment of a service. The level of satisfaction with existing systems plays an important role as far as incentives to change is concerned (Chau & Tam, 1997). This study supported the hypothesis that there was a negative influence of satisfaction

with Line-Item system on the willingness to adopt PBBS where the results from both quantitative and qualitative parts of this research showed that negative relationship between satisfaction with line items and the readiness to adopt (PBBS). This meant that the less satisfied the employees were with the current accounting (Line-Item) system the better the chance of adopting an alternative solution. A low satisfaction level with the existing public budgeting system in Libyan higher education institutions provided a great opportunity to facilitate the adoption of PBBS. It would offer the impetus and greater momentum to find new ways to achieve better performance, effectiveness and efficiency. If the people were not satisfied with Line-Item system, there were higher chances that PBBS would be adopted. If the current employees and administrators were not satisfied with Line-Item, then this meant that there was a higher probability that the PBBS would be adopted. In short, this meant that satisfaction with the current (Line-Item) system was negatively associated with the adoption of PBBS.

5.7.4 Perceived Barriers and Readiness to Adopt PBBS

Barriers can be defined as the lack of resources and knowledge, the skill level of business operation, the lack of trust in the system and the lack of readiness (Cragg & King, 1993; Mehrtens et al., 2001; Darch & Lucas, 2002; Duan et al., 2002; Van Akkerton & Cavaye, 1999; Bode & Burn, 2002; Lewis & Cockrill, 2002). Perceived barriers were measure using nine items from Burn and Robins (2003) and Heeks (2002) and three other items from Adler et al. (2000). The results of the current studies shows that the finding from the survey showed that showed that negative relationship between Barriers and the Readiness to adopt (PBBS) however the interviews showed that there are no any barriers to adopt and implemented PBSS in their higher learning institutions. This result was consistent with previous research (Wright & Davidson, 2000). However, Chau and Tam (1997) found a positive relation between barriers and the adoption of a new system, which was inconsistent with the results of this study.

The result of this study was consistent with Adler et al. (2000) who found that limitations in the firm's human resources were the most serious barrier to the adoption of new accounting techniques. These include such factors such as the lack of relevant skills, a lack of time, management support and the cost of hiring capable employees. An overall, prior study supports barriers to adoption as it is seen to reduce the readiness of PBBS adoption due to its negative significant coefficient.

5.7.5 Tolerance for Ambiguity and Readiness to Adopt PBBS

Furnham and Ribchester (1995, page number to insert) reported that tolerance for ambiguity (TA) refers to "the way an individual (or a group) perceives and processes information about ambiguous situations or stimuli when confronted by an array of unfamiliar, complex or incongruent clues. TA is a variable that was often conceived on a uni-dimensional scale. A person with a low tolerance for ambiguity experiences stress reacts prematurely and avoids ambiguous stimuli. At the other extreme of the scale, however, a person with high tolerance for ambiguity perceives ambiguous situations/stimuli as desirable, challenging and interesting and neither denies nor distorts their complexity of incongruity." The study found that tolerance for ambiguity positively affected readiness to adopt PBBS. This result was inconsistent with prior evidence reported by Yurtsever (2001).

5.7.6 Training and Readiness to Adopt PBBS

Training programmes as used in this research context, referred to programmes that were designed to prepare employees to become capable of estimating revenue and expenditure in accordance with the requirements of the new system (Allwozi, 1999). Furthermore, the training process is defined as the systematic acquisition of attitudes, concepts, knowledge, rules or skills that result in improved performance at work (Kirkpatrik, 1994; Marsick & Neaman, 1996; Greengard, 1998; Koehle, 2000; Berry,

2000; Matey, 2002). The items used to measure this construct were adapted from Jrissat (1995). A higher score indicates that the higher employees were trained the higher the interest in adoption and implementation of PBBS.

The OLS results confirmed that the quality of training was very important and had considerable influence on readiness to adopt PBBS. This supported the study hypothesis that training was a significant predictor of the level of willingness to adopt PBBS by Libyan higher learning institutions. The findings in this study were similar with previous research that found highly trained personnel were more willing to adapt to the newly introduced system (Allwozi, 1999; Boras, 2004; Mohasin, 2005).

5.7.7 Attitude Towards Change, Relative Advantage, Tolerance for Ambiguity and Readiness to Adopt PBBS

Attitude towards change (ATC) was investigated in this study as having a strong contingent effect on the readiness to adopt PBBS. The impact of the moderating effect was discussed in the previous subsection. The moderating variables cited based on the theoretical framework were: (i) the impact of the interaction between attitude towards change and tolerance for ambiguity towards readiness to adopt PBBS; and (ii) the interaction effect of attitude towards change and relative advantage towards the readiness to adopt PBBS.

The hypotheses tested for these effects were as follows:

H7: Attitude towards change moderates the relationship between tolerance for ambiguity and the readiness to adopt PBBS

H8: Attitude towards change moderates the relationship between relative advantage and the readiness to adopt PBBS

Hypothesis 7 suggested that the range of attitudes towards change in the user (i.e. low, medium and high) affected the strength of the relationship between this tolerance for ambiguity and the readiness to adopt PBBS. The results indicates that attitude towards change moderated the relationship between tolerance for ambiguity and the readiness to adopt PBBS, which supported the seventh hypothesis of this study. This indicated that the higher the attitudes towards change of the users, the higher the possibilities of the readiness to adopt PBBS even if the users had a high, medium or low level of tolerance for ambiguity. In conclusion, most of the users of the current system were willing to accept and learn the new system even though they had not worked with it.

Similarly, it was suggested that the range of attitudes towards change affected the relationship between relative advantage and the readiness to adopt PBBS. In other words, if there was a high level of attitudes towards change among users and decision makers, the association of relative advantage and the readiness to adopt PBBS would be stronger. In testing the moderating effect of attitude towards change in the relationship between relative advantage and the readiness to adopt PBBS, it was found that unless prospective users of PBBS had a positive attitude towards change, the relative advantage of the new system alone was not enough to drive for adoption, which supported the eighth hypothesis of the study. Therefore, it is concluded that relative advantage was necessary but it was not sufficient for the future adoption PBBS. In essence, PBBS would be accepted to replace the current system not sue to its relative advance but rather due to the high positive attitude towards change that the users had possessed.

In summation, there is a high indication that PBBS adoption will be positively received in higher learning institutions of Libya. Ultimately, institutions have no authority to decide on the implementation of the new system the authority lies mainly with the Prime Minister.

5.8 Chapter Summary

This chapter presented both the results based on the questionnaire survey and in-depth interviews. The analysis of the data from the questionnaire survey was done quantitatively while for the in-depth interviews, it was done qualitatively. Overall, the results of the questionnaire survey indicated that the readiness to adopt PBBS in Libyan higher learning institutions was influenced by various factors including relative advantage, organisational support, and satisfaction with Line-Item system, barriers, tolerance for ambiguity, training and attitude towards change. Six factors had significant direct relationship with the readiness to adopt PBBS. Furthermore, attitude towards change has a direct significant relationship with the readiness to adopt PBBS. In addition, attitude towards change moderated the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS.

The above finding shows there is a strong readiness on the part of the higher institutes of learning in Libya and this finding seem to be confirmed by the findings made through the in-depth interviews with the key respondents of the related organizations

CHAPTER SIX

SUMMARY AND CONCLUSIONS

6.1 Introduction

This chapter provides a summary and conclusion of this study. It discusses issues relating to the research limitations, contributions, applications and recommendations for further studies. The following sections will go as follows: Section 6.2 presents research questions and findings revisited, Section 6.3 Implications to Theory and Practice, section 6.4 recommendations to facilitate the readiness to adopt PBBS in the institutions of higher learning in Libya, section 6.5 presents Implications for theory and practices of the field, section 6.6 presents contribution to knowledge on public budget, section 6.7 presents limitations of the research, section 6.8 present Agenda for future research and finally, section 6.9 concludes and summarises this chapter and thesis.

6.2 Research Questions and Findings Revisited

This study investigates the effect of six predictors, namely relative advantage, organisational support, tolerance for ambiguity, training, satisfaction with Line-Item budgeting system and barriers, and the readiness to adopt PBBS. In addition, the study investigates the moderating effects of attitude towards change on the relationship relative advantage and tolerance for ambiguity and the readiness to adopt PBBS. Specifically, it examines whether the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS are stronger or weaker given the range of attitudes concerning change.

Therefore, in total, this study aims to answer eight research questions. The first four questions enquired as to whether the readiness to adopt PBBS was positively associated with relative advantage, organisational support, tolerance for ambiguity and training. The next two questions queried whether satisfaction with Line-Item and barriers were

negatively associated with the readiness to adopt PBBS. Finally, the last two questions enquired whether attitude towards change moderated the relationship between (i) relative advantage and the readiness to adopt PBBS and (ii) tolerance for ambiguity and the readiness to adopt PBBS in the Libyan higher learning institutions.

Non-probability "judgemental sampling technique" is a form of convenience sampling was used in collecting the data, using a survey study of 432 respondents selected from users in the finance and accounting divisions in the Libyan higher learning institutions. Utilising a quantitative analytical approach to treat the data, the study's objectives were realised. The statistical results of this study present sufficient evidence to answer the eight research questions. Also semi-structured interviews was conducted

Results show that , Relative Advantage positively influences the readiness to adopt PBBS. This result is consistent with the diffusion innovation model (Rogers, 1995) and the diffusion contingency model of government accounting. The result is also consistent with prior studies on the effect of perceived relative advantage in adopting new technology. Relative advantage represents a significant component of the characteristics of innovation according to the diffusion-contingency model suggested by Godfrey et al. (2001). All the above results were supported by the information collected in the interview

Organisational support affects the readiness to adopt PBBS. This result is consistent with the organisational theory and the significance of the organisational characteristics argued by Godfrey et al. (2001). Organisational support has been viewed as a positive attitude towards change from higher management as discussed in Luder (1992). The result is also consistent with prior empirical evidence of top management support and the adoption of new system.

Satisfaction with Line-Item budgeting system was shown to be negatively associated with the readiness to adopt PBBS. The issue of satisfaction with old systems was

discussed as a part of the stimuli for change in the agenda setting stage in the contingency-diffusion model (Godfrey et al., 2001). In this study, the argument is that satisfaction with the new system (PBBS) is partly dissatisfaction with the old system. Barriers that are seen to be negatively associated with the readiness to adopt PBBS are seen to be consistent with the diffusion contingency model of government accounting diffusion (Godfrey et al., 2001). It is also strongly consistent with prior empirical studies in the adoption of new system.

Higher Tolerance for ambiguity is associated with accepting system change represented by the readiness to adopt PBBS. This result is highly consistent with prior studies in psychology and organisational behaviour in the organisational theory. It can also be seen that the result shows a positive association between user training and the readiness to adopt PBBS. This result is consistent with prior studies on the effects of training on the readiness to adopt PBBS and new systems (Mohasin, 2005; Fleishman & Mumford, 1989; Brinkerhoff & Montesino, 1995; Caudron, 1997). The result is also consistent with the definition of "complexity" characteristics argued in the contingency-diffusion model. "Complexity" in the model refers to the degree of sophistication on the part of users, and it is argued in the model to be positively related to the adoption of the new diffusion of government accounting system.

Finally, the range of attitude towards change affects the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS. Prior evidence and regularities have documented strong effect for the moderating effects of attitude towards change on the adoption of new innovation.

The above findings were generated through a rigorous analysis of data using the quantitative method that are essentially gathered through questionnaire survey. As mentioned in the chapter on research methodology, this study also adopted qualitative method as part of its mixed-method approach in data gathering which involved

interviews with selected key respondents who were directly involved in the implementation of budgeting process or at the decision-making level to decide the future direction of budgetary system in their respective organization.

Results from these key respondent interviews tended to support the findings made through quantitative analysis in the sense, a sizable majority of the respondents is readiness to adopt PBBS in their respective institutes of learning because of the inherent belief that PBBS will bring benefit to the organisation particularly in term of enhancing the financial or budgetary performance of these organizations and in the long term contributes to their development and progress. However, a few of cautions was also raised. Firstly, it was suggested that the change should be incremental beginning with its implementation made on one or two sections. Secondly, the change must be backed by adequate financial back-up in order for the system to be successfully adopted and subsequently sustained. Finally, it should involve all levels of personnel and staff of these organizations – top, middle and lower categories of employers in all stages of adoption and implementation. This entails training, education and provision of information and knowledge on PBBS.

Also the results of the survey questionnaire and semi-structured interviews indicate that satisfaction with the traditional system Line-item is very low. This gives more chances to adopt performance based budgeting PPB. Most subjects interviewed mentioned Line-item as a poor method, because it does not focus on the output and the results. In contrast they believed that the PBB is a more effective method since it focuses on the objectives and performance, control of expenditure and ease of use. This in turn leads to accountability and transparency.

6.3 Implications to Theory and Practice

This research adds to the empirical test of theory driven hypotheses to PBBS and diffusion of innovation scholarship in general and to knowledge with regards to the

management of higher learning institutions in particular. It forms the basis for the development of guidelines for managerial practice in relation to the introduction of PPBS in their respective academic organizations.

This study is important to policy makers and development practitioners who are concerned with PBBS as a management tool for better planning and control of public expenditure. For countries in the Arab region or other countries having similar circumstances and characteristics like Libya who are on the verge of considering moving to a new system of budgeting, this study provides an insight into the dynamics and challenges if one were to adopt a new way of doing things, in this case PBBS.

This study can be considered to be among a few of the research conducted in the Arab regions which empirically tested organisations and by engaging key participants in the implementation of this research. The research findings have revealed a number of critical factors that influence the readiness to adopt PBBS. The identification of these critical success factors are important inputs for the management of institutions of higher learning in making decisions particularly with regards to the existing budgetary system as opposed to the adoption of PBBS which can be of benefit to the university administration. A list of critical success factors which the study unveiled addresses some of the theoretical shortcomings in other researches concerning the adoption and implementation of public budget.

6.3.1 Contribution to Knowledge on Public Budget

This research presents an academic contribution to the literature review of the adoption of PBBS in the context of developing countries. This study contributes to accounting literature in different ways. It improves one's understanding of the dual role of PBBS adoption in the public sector, especially in higher institutions of learning. The models developed, incorporate and examine the joint effects and influencing factors such as relative advantage, organisational support, satisfaction with line-item system,

organizational barriers, and tolerance for ambiguity, training and attitude towards change. For prospective adopters of PBBS, studies into the key critical success factors are imperative to ensure its successful adoption and implementation.

In addition to that, this study contributes to the budgeting research field by testing the proposed variables simultaneously in the readiness to adopt PBBS using a moderated approach. The development of the conceptual framework of this study considers both direct and indirect effects of the variables on the readiness to adopt PBBS in higher learning institutions.

With regards to theoretical contribution, the findings of this study represents a significant contribution in providing empirical evidence to some of the reform models undertaken by many governments such as in the field of government accounting reform. Specifically, this study is based on the integration of the government accounting reform model (Luder, 1992) and the diffusion of innovation model (Rogers, 1995), both combined to form a hybrid model defined as the diffusion-contingency model (Godfrey et al., 2001). Therefore, the most important contribution of this study is its empirical findings in providing additional evidence in testing these models in a developing country like Libya. As the findings show, factors such as organisational support, satisfaction with line-item system, barriers, tolerance for ambiguity, training and attitude towards change are significantly associated with the readiness to adopt PBBS.

The results of this study could assist Libya and other neighbouring countries with similar characteristics to recognise or acknowledge different issues or problems that may have been encountered when adopting change or new system such as PBBS. In addition, this study will be of significant help to researchers and practitioners who have an interest in public administration, budgetary reform and those international organisations such as the International Monetary Fund (IMF) and the World Bank (WB) who are concerned with the use of public fund. More importantly, the study reinforces

the need for Libyan higher learning institutions to look into the existing budgeting system and evaluate its shortcomings and considered the adoption of a more efficient and effective approach of financial management such as PBBS. It will direct more researchers to study other systems of public budgeting including PBBS that might be suitable for Libya taking into consideration its social, economic, cultural and political environment.

Some other factors such as values, beliefs, leaderships, political regimes, diverse and unique cultural practices, ideological differences and different accounting systems or applications might have also influenced the results and the readiness to adopt PBBS. However, these factors are not covered here as they are outside the realm of this study. Nevertheless, it is acknowledged that the case study presented and its analysis have appropriately included all key factors that are instrumental for the potential adoption of PBBS in various countries with similarities in characters and socio-political climates such as in Libya. Adoption of new technologies including that of accounting and budgeting system would have similar success factors given the similar pre-requisite and circumstances discussed earlier among the Libyan higher learning institutions. Indeed this research assists in the understanding of the complex nature of adoption process of a new system in such as a unique country like Libya. However, it must be admitted that this study is not exhaustive and it is limited by its scope as well as by resource constraints such as time and money.

6.3.2 Contribution to Practice

Findings from this chapter would be beneficial to various parties including the practices of higher learning institutions' accounting, the accounting profession in general and the overall knowledge to the field of accounting and business.

The accounting practices of public-owned higher learning institutions differ in many ways, including revenue sources and expenditure from those of privately-owned

institutions and commercial establishments. Hence, adoption of new technology or accounting methods would require vast injection of public monies, requiring higher levels of awareness, training and capacity building. The findings of the research assist greatly in the anticipation of the acceptance and willingness levels of such adoption, thus reducing the costs associated with failures or non-successful adoption prior to full implementation phases.

Additionally, the accounting profession would benefit from the research findings by preparing the personals and practitioners against many possibilities and challenges of changes in accounting regimes. In particular, Libyan professional accounting boards or organisations, accountants and their supervisors can anticipate obstacles and prospective training required that are associated with implementing the PBBS in Libya. Knowledge and technical know-how transfers can be planned early and systematically before and during periods of transition.

Series of surveys involving non-adopters would be able to identify, anticipate, mitigate and remedy possible conflicts and issues that would have otherwise not been expected from unfamiliar, unexposed non-users of the new system.

Basically, the findings of this research aims at preparing the transition of new system replacing a conventional one, with the least amount of resistance and other negative costs pertinent to adoption of new and unfamiliar system of accounting practices.

6.4 Recommendation to Facilitate the Readiness to Adopt PBBS in the Institutes of Higher Learning in Libya

As demonstrated by the findings, it is clear that there is an overall readiness on the part of the institutes of higher learning and the readiness to adopt PBBS. However, to facilitate this adoption process and its implementation, a number of recommendations may be put forwards as follows:

(a) Total Commitment on the Part of Top Management

In order to be successful in adopting PBBS and achieving its objectives, commitment on the part of top commitment to the new system is crucial because it helps to facilitate its adoption university-wide. It also facilitates to develop commitment of the operational staff particularly the support from the controlling officers. As found in the study, the current support from the controllers of finance was rather low and their involvement was not encouraging. With greater commitment, support and involvement, the level of understanding and appreciation will help to convince the top management particularly those involved in the decision-making process the importance and usefulness of PBBS as an important management tool for better planning and control of public expenditure.

(b) Establishment of Appropriate Structure for the Implementation of Programmes and Activities

There is a need to put in place appropriate structure of programmes and activities at every level in the universities, colleges and other higher learning institutions incorporating a clear set of strategic vision for operational purposes. With clear vision and strategies, the process of adopting and accepting the new system will be smoother and focussed. As a step forward it also calls for redesigning of proper guidelines on the new budgeting system for the universities and other institutes of higher learning to follow to enhance their respective budgetary or financial management performance. In line with this, necessary financial and non-financial indicators to evaluate the performance of the programmes and activities will be developed.

(c) Improving the Legislative System With Regards to Budgeting

Given Libya's system of public administration, it is pertinent that the current legislative system with regards to budgeting must be relooked in order to introduce the new system which can be accepted without any hindrances. If need be, the current laws pertaining to budgeting might have to be amended to require government institutions the readiness to

adopt PBBS. This, of course, requires a lot of political will on the part of the government.

(d) Human Resources Development

Human resource is one of the important assets to any public or private sector organization. For any change, adoption or implementation, the human resource part of the organization must be adequately and properly prepared through the provision of sufficient training and other educational activities. Hence, there is a need to train all relevant personnel and staff of departments in charge of accounts and finance particularly in the application of PBBS.

But most importantly they have to be involved directly in designing programmes and activities which form the foundation of the new system. This human resource development involves the organization of regular workshops, seminars, conferences and attending overseas training events to expose relevant personnel to new development in PBBS.

(e) Adequate Financial Allocation of Budget for Sustainable Implementation

All the above recommendation will come to a nought if there is no adequate budget allocation to ensure successful implementation of PBBS. In order to see it implemented in a sustainable manner, a comprehensive budget allocation must be made on the part of the government over a long term period. This budget allocation must be made to all institutes of higher learning who are committed to the adoption of PBBS. It has the incentive effect of encouraging other institutions to follow suit in adopting PBBS.

6.5 Agenda for Future Research

Based on this study, a number of potential research areas have been identified. One such area is to look into how leadership styles can influence or affect the readiness to adopt PBBS in the public sector organization.

A study into the impacts of government regulations on the readiness to adopt PBBS is potentials. The presence of archaic government regulations or the lack of it in Libya must be examined in order to develop a more psychology -economic and political environment that is open to new ideas, innovation and change. One such change is the movement of the current line-item budgetary system to that of PBBS.

Aside from research it should also be undertaken to look the level of preparedness on the part of personnel of the respective organizations such as the universities and other institutes of higher learning to adopt and adapt to the introduction of a new system in management such as the implementation of PBBS. However, the study on the level of preparedness may also include other dimensions such as the availability of adequate finance to sustain the PBBS and the availability of technology to support the system.

On a broader scale, studies may be conducted to cover the influence of a host of factors such as value system, political ideologies and cultural practices on the adoption of PBBS. Libya like other countries possesses its set of uniqueness in the way it operates and governs its public sector organizations. A study into the complexity of running and managing a public organizations such as universities will provide decision makers some insights into ways and means to expedite change and innovation that can help bring progress and development to Libya.

6.6 Limitations of the Study

This section examines the limitations of the current study and considers the impacts these limitations have on the research conclusions. The study is subject to the natural limitations connected with survey types of research but there are a number of limitations to the study that need to be addressed.

It is also admitted that a bigger sample of respondents and questionnaires would have given a higher level of reliability but the study is limited by financial and time resource constraints. Hence, the scope of this study is only centred on 15 institutions of higher

learning even though Libya has 30 academic institutions. The findings of this study cannot be generalised to all government-based organisations.

Though the findings from this study are useful for explaining the characteristics of a big population, generality of the results is limited and inadequate to the government-based organisations, particularly, higher learning education institutions.

Also, the use of cross-sectional quantitative data may limit our understanding of the phenomenon surrounding the adoption of PBBS. The use of qualitative results may provide additional insights to complement the quantitative findings.

Other limitations include the presence of non-responsive bias which is always an issue in any survey-type research. However attempts to reduce non-responsive bias were taken to ensure a good response rate.

6.7 Conclusion

As a matter of conclusion, this study has covered a wide range of past literature that include management change theory and diffusion of innovation theory in order to develop an applied research framework for empirically examining the readiness to adopt PBBS among the Libyan institutes of higher learning. Using the framework, the study focused on assessing the relationships between a set of six variables with prospective innovation adoption that can be influenced also by the presence of moderating variables. It was found that factors such as relative advantage, organisational support, satisfaction with Line-Item systems, barriers, tolerance for ambiguity and training influenced the readiness levels of adopting PBBS. Specifically, it was found that attitude towards change has a moderating effect on the relationship between relative advantage and tolerance for ambiguity and the readiness to adopt PBBS. These relationships in addition, have been represented by various mathematical models developed based on the regression methods. To support the quantitative analysis, a qualitative analysis was

also undertaken in which it found that there is a general readiness on the part of key stakeholders to the readiness to adopt PBBS.

The findings of this study are useful to both scholars and practitioners. Scholars can use the results to expand their knowledge on each of the factors examined together with other supplementary factors identified. It ends up by highlighting some potential areas for further research. Indeed, this research has gone through the rigor and cycle of doing research and it has achieved all of the objectives set in the earlier chapters.

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APPENDICES

APPENDIX A: List of the Labels of Constructs/ Variables

Label	Construct/ Variables
RA	Relative Advantage
OS	Organizational Support
SL	Satisfaction with Line-item
BA	Perceived Barriers of PBBS Adoption
TA	Tolerance for Ambiguity
TR	Training
ATC	Attitude toward change
PBBS	Readiness to adopt PBBS

APPENDIX B: LIST OF CODE USED IN DATA ANALYSIS

	Variable / Items	Code
	Relative advantage	**RA**
1-	Performance based budgeting system (PBBS) prepared with strategy to obtain goals.	**ra1**
2-	Performance based budgeting system (PBBS) is vital in management for operating and measuring performance.	**ra2**
3-	Performance based budgeting system (PBBS) is useful to compare costs and benefit of each potential activity.	**ra3**
4-	Performance based budgeting system (PBBS) could avoid misspending	**ra4**
5-	Performance based budgeting system (PBBS) cost is determined by considering all factors.	**ra5**
6-	Performance based budgeting system (PBBS) cost is used before achieving goals.	**ra6**
7-	Performance based budgeting system (PBBS) could be revised to parallel changes on the organizations strategy	**ra7**
8-	Performance based budgeting system (PBBS) must be parallel with external environment.	**ra8**
9-	Performance based budgeting system (PBBS) utilizing rigid budgeting will reflect inaccuracy in measuring performance.	**ra9**

	Variable / Items	Code
No	**Organizational support**	**OS**
1-	My manager will be visible supportive of the learning of the new Performance based budgeting system (PBBS).	**os1**
2-	In my University the implementation process will be successful because the management may provide adequate information and training to Performance based budgeting system (PBBS).	**os 2**
3-	In my University, commitment of management is behind successful adoption of the Performance based budgeting system (PBBS).	**os 3**
4-	My superior will allow sufficient time to learn (PBBS).	**os 4**
5-	If any special tooling is required to use this Performance based budgeting system (PBBS), appropriately, it will be purchased.	**os 5**
6-	Any accessories needed for the well use the Performance based budgeting system (PBBS), will be purchased.	**os 6**
7-	It is easy to find a resource to help me to solve any problem that I might encounter when using the Performance based budgeting system (PBBS).	**os 7**
8-	Financial support and resources availability are behind successful learning process and acceptance of the Performance based budgeting system (PBBS).	**os 8**

	Variable / Items	Code
No	Satisfaction with Line-item (LB)	**SL**
1-	Line-item is adequate for planning financial position.	**sl 1**
2-	Line-item is suitable for planning Cash flows.	**sl 2**
3-	Line-item is suitable for evaluating management performance.	**sl 3**
4-	Line-item suitable for providing information on non-financial performance.	**sl 4**
5-	Line-item is adequate for providing information on financial performance.	**sl 5**
6-	Line-item system does not lead to realistic goals.	**sl 6**
7-	Line-item is suitable in generating information for decision making.	**sl 7**
8-	Line-item system is adequate to allocation of resources.	**sl 8**
9-	Line-item is adequate for control of expenditure.	**sl 9**
10-	Using Line-item system to non-application of accountability accounting.	**sl10**

	Variable / Items	Code
No	Perceived barriers of PBBS adoption	**BA**
1-	Non Lack of coordination and cooperation between departments	**ba1**
2-	Non Lack of effective leadership support and commitment amongst senior public officials.	**ba 2**
3-	Ease in the procedures for the application of the rules.	**ba 3**
4-	High cost of development.	**ba 4**
5-	Non Lack of quality data (quality of information availability).	**ba 5**
6-	Non Lack of knowledge of use (PBBS).	**ba 6**
7-	Non Lack of relevant skills.	**ba 7**
8-	Non Fear of failure.	**ba 8**

	Variable / Items	Code
No	Attitude towards Change	**ATC**
1-	Change usually reduces my ability to control what goes on at work.	**atc1**
2-	I usually resist new ideas.	**atc 2**
3-	I do not like change.	**atc 3**

4-	Change frustrates me.	**atc 4**
5-	Most changes at work are irritating.	**atc 5**
6-	I usually hesitate to new ideas.	**atc 6**
7-	Change usually benefits the organization.	**atc 7**
8-	Most of my co-workers benefit from change.	**atc 8**
9-	I intend to do whatever possible to support change.	**atc 9**
10-	I usually support new idea.	**atc 10**
11-	I find most changes to be pleasing.	**atc 11**
12-	I usually benefit from change.	**atc 12**
13-	I look forward to changes at work	**atc 13**
14-	I am inclined to try new ideas.	**atc 14**
15-	Change tends to stimulate me.	**atc 15**
16-	I often suggest new approaches to things.	**atc 16**
17-	Change often helps me perform better.	**atc 17**
18-	Other people think that I support change.	**atc 18**

	Variable / Items	**Code**
No	Readiness to adopt PBBS	**PBBS**
1-	More effective control of inputs.	**pbbs 1**
2-	More effective control of outputs.	**pbbs 2**
3-	Budgeting decision are more focused.	**pbbs 3**
4-	Better reporting than line-item budgets.	**pbbs 4**
5-	PBBS has clearer objectives.	**pbbs 5**
6-	PBBS process focuses more on the future than on the past in developing budgeting amounts.	**pbbs 6**
7-	The PBBS impact that the budget will have on society is considered.	**pbbs 7**
8-	There is great potential for adopting and applying the budget of programmes and performance	**pbbs 8**
9-	As Budgets user of the system I will be supporting the adoption and application of the budget of performance based budgeting	**pbbs 9**

	Variable / Items	**Code**
No	Tolerance of Ambiguity	**TA**
1-	I prefer clear, planning goals and objectives for my job.	**ta1**
2-	I would like to be certain about how much authority I have.	**ta 2**
3-	I like to know exactly what my responsibilities are.	**ta 3**
4-	I am comfortable working with people without accounting training.	**ta 4**
5-	I am comfortable taking action without the knowledge/ approval of my superiors.	**ta 5**
6-	I feel there is a right and a wrong way to do almost everything.	**ta 6**
7-	A problem has little attraction for me if I do not think it has a solution.	**ta 7**
8-	I like to consider new idea even if they later turn out to be a waste of time.	**ta 8**
9-	I feel that the way to understand complex problem is to be concerned with their larger aspects instead of breaking them into small pieces.	**ta 9**

	Variable / Items	**Code**
No	Training	**PT**
1-	Courses are held frequently in the University for staff on modern administrative techniques	**pt1**
2-	University leadership Supports the implementation of programs for the application of the budget performance	**pt 2**
3-	Training courses are held for staff in the area of cost accounting.	**pt 3**

APPENDIX C

UNIVERSITY OF MALAYA

FACULTY OF BUSINESS AND ACCOUNTANCY

A Doctoral Survey on Management Accounting

Factors Influencing the Readiness To Adopt Performance Based Budgeting System (PBBS) in Libyan Institutions of Higher Learning

Prepared by: ALI JABALLA EHESIN

Dated: 25 July2010

The views expressed in the completed questionnaire will be treated in strictest confidence. Any information identifying the respondents will not be disclose

Performance based Budgeting Systems (PBBS)

Brief Introduction:

What is Performance based budgetingsystem?

Performance based budgeting system (PBBS) is a performance-based or results oriented system. As with other such systems, PPBS focuses the budget process more on the results to be achieved for the budget allocated.

PBBS was introduced in the**US** in 1965. Most developed countries such as the **UK, France, Belgium, Japan, Canada and Australia** introduced a similar model. Program budgeting too caught on with other developing countries such as **India, Sri Lanka, Nepal and Malaysia.**

PBBS was introduced to overcome the defects of the line-item budgeting system. The line-item budgeting system is a good system of budgeting and expenditure control by detailed expenditure categories. **However, it is not able to account for what is being produced – in terms of goods and services – for the expenditure.**

Performance based budgeting system (PBBS) Concept

The Performance based budgeting system is a process of making decision about how limited resources should be allocated to many possible uses. The basic features of PBBS were stated in 1924 documents of General Motors as follows:

- To identify major objectives
- To define programs essential to these goals
- To identify resources to be allocated to programs
- To analyze the alternative courses of actions systematically

Below is a brief comparison between PBBS and line- item system of budgeting.

Performance based Budgeting Systems (PBBS)

Brief Introduction:

APPENDIX C (continued)

What is Performance based budgeting system?

Performance based budgeting system (PBBS) is a performance-based or results oriented system. As with other such systems, PBBS focuses the budget process more on the results to be achieved for the budget allocated.

PBBS was introduced in the**US** in 1965. Most developed countries such as the **UK, France, Belgium, Japan, Canada and Australia** introduced a similar model. Program budgeting too caught on with other developing countries such as **India, Sri Lanka, Nepal and Malaysia.**

PBBS was introduced to overcome the defects of the line-item budgeting system. The line-item budgeting system is a good system of budgeting and expenditure control by detailed expenditure categories. **However, it is not able to account for what is being produced – in terms of goods and services – for the expenditure.**

Performance based budgeting system (PBB) Concept

The Performance based budgeting system is a process of making decision about how limited resources should be allocated to many possible uses. The basic features of PBBS were stated in 1924 documents of General Motors as follows:

- To identify major objectives
- To define programs essential to these goals
- To identify resources to be allocated to programs
- To analyze the alternative courses of actions systematically

Below is a brief comparison between PBBS and line- item system of budgeting.

Line Item Budgeting (LB)	**Performance based budgeting system (PBBS)**
1. Budget Structure The budget structure follows the organizational structure. Such a structure does not help in relating expenditure to specific outputs	The budget structure is based on programs and activities each with its set of objectives. This structure may not follow the organisational structure as it seeks to link expenditure with specific outputs of the activities
2. Planning Planning is more in terms of resource requirements for expenditure items for the sectors/departments	Planning for resource requirements is based on the strategic priorities of the programs and activities and the planned performance levels.
3. Budgeting Budgeting is by resource requirements for the various line items. Budget bids are justified by resource needs.	Budgeting is more focused on results expected from the proposed expenditure and the implication of budget revision to the expected performance. Budget bids are justified in terms of expected results.
4. Monitoring Only expenditures are monitored and accounted.	Monitoring is also on whether the results specified have been achieved and if not, why not
5. Reporting Reporting to the Ministry of Finance and the Parliament is on the expenditure performance of the various line items	Both physical and financial performance levels are reported
6. Evaluation There is no evaluation on whether the ministry goals and objectives are being achieved.	Evaluations are conducted to assess the continued relevance, efficiency and effectiveness of the program.
7. Accountability Accountability is only on whether expenditure is according to the budget and financial rules and regulations	Accountability is also on the achievement of ministry objectives and planned results

Dear respected respondent.

The purpose of this survey is to examine the Readiness and implementation **Performance based budgeting system** (PBBS) in **Libyan higher Learning institutions**. This survey is designed to obtain information that will assist in understanding the possibility of adopting and what factors influence the adoption in Libyan higher institutions of learning. Hence, your honest opinion and success of this survey depends on your participation and honest responses.

Your responses are valuable and will help to improve efficiency and effectiveness of the Libyan higher learning institutions and public sector implementing the PBBS. We would therefore greatly appreciate your assistance in answering the questionnaire. Please be assured that your responses will be kept strictly confidential. The strict ethic guidelines of University Malaya will ensure anonymity is maintained at all time. Hence, no names are required. Individual participants will not be identified in the analysis as only aggregated results will be analyzed and presented.

The present survey is part of my study for PhD Degree that tries to determine the prominent predictors of PBBS adoption in **Libyan higher learning institutions**. Please read each question carefully and answer it to the best of your ability. There are no correct or incorrect responses: we are merely interested in your personal point of view. The survey is designed for all in Libyan higher institutions of learning users.

Thanks you for your time and consideration. It is only with your generous help this study can be successful.

Sincerely,

ALI JABALLA EHSEIN E-mail jaballa_2004@yahoo.com

PhD Candidate

Department of Management Accounting and taxation

Faculty of Business and Accountancy

University of Malaya-Malaysia

(P.S Please find enclosed a small token of appreciation as a way of saying thanks

Instructions of survey

Do not worry about projecting a good image and the numbers alongside the statements used in this survey for following responses

1- Strongly disagree
2- Disagree
3- Neither disagree nor agree
4- Agree somewhat
5- Strongly agree.

Many questions in this survey make use of rating scales with 5 places; you are to tick {X}(B. Scheers, Miekatrien S, & B., 2005) across the number that best describes your opinion. For example, if you were asked to rate "The Weather in Libya is good" on such a scale, the places should be interpreted as follows:

If you think the weather in Libya is extremely nice, then you would Tick X alongsid the number 5, as follows

Level of Agreement

1 2 3 4 5

Question's statement	Strongly Disagree …… Strongly Agree				
Weather in Libya is good.	☐	☐	☐	☐	☐

But

If you think the weather in Libya is quite bad, then you would Tick X alongside the number 2 as follows.

1 2 3 4 5

Question's statement	Strongly Disagree ……..Strongly Agree				
Weather in Libya is bad.	☐	☐	☐	☐	☐

In making your ratings, please remember the following points

1) Please answer each of the statements related to the questions by ticking {X} alongside the number that best describes your answer.
2) Some of the questions may appear to be similar, but they do address somewhat different issues please read each question carefully.
3) Be sure to answer all items-do not omit any.
4) Never tick more than one number on a single scale.

DEMOGRAPHICS PROFILE

Section 1 (Demographics)

1-What is your gender ?	**2-Age**
☐ Male	☐ Under 20 years
☐ Female	☐ 20-30 years
	☐ 31-40 years
	☐ 41-50 years
	☐ 51 years and above

3-Years worked	4- What is your qualification?
☐ Under 5 years	☐ Lower Diploma
☐ 6-10 years	☐ Higher Diploma
☐ 11-15 years	☐ Bachelor
☐ 16-20 years	☐ Master
☐ 21-25 years	☐ Doctorate
☐ 26-30 years	☐ Professional qualifications
☐ 31 years above	

5- Please check the category that best describes your marital Status:	6- Which departments are you working in?
☐ Single	☐ Academic
☐ Married with children	☐ Non-academic
☐ Married without children	☐ Financial and Accounting
	☐ Faculties financial departments
	☐ Others

7- Size of your Organization	8- Job Title
☐ Under 100 academics	☐ Executive
☐ 101-200 academics	☐ Academic
☐ 201-300 academics	☐ Professor
☐ 301-400 academics	☐ Associate Professor
☐ 500 above	☐ Lecture
	☐ Other

9- What is your employment status? ☐ Full time ☐ Part-time ☐ Other

10- Do you use PBBS in your University? ☐ YES ☐ NO

11. Universities and Institutions.

☐ University of Garyouins	☐ University of All Marigab
☐ University of All Fatah	☐ University of Naser
☐ University of Sabaha	☐ Arab Medicience University
☐ University of 7 October	☐ Misratha Higher Institute
☐ University of 7 April	☐ Civil Aviation and Meteorology Higher Institute
☐ University of Sirt	☐ Benwilled Higher Institute
☐ University of Western of Mountain	☐ Zeliten Higher Institute
☐ University of Omar all Mugthar	

Section 2 (readniess to adpot PPBS).

1-This question is to evaluate your perception related to relative advantage of using Performance based budgeting system (PBBS) in your organization. Please state the level of agreement with the statements using the scale given.

No	**Relative advantage**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	Performance based budgeting system (PBBS) prepared with strategy to obtain goals.	☐	☐	☐	☐	☐
2.	Performance based budgeting system (PBBS) is vital in management for operating and measuring performance.	☐	☐	☐	☐	☐
3.	Performance based budgeting system (PBBS) is useful to compare costs and benefit of each potential activity.	☐	☐	☐	☐	☐
4.	Performance based budgeting system (PBBS) could avoid misspending.	☐	☐	☐	☐	☐
5.	Performance based budgeting system (PBBS) cost is determined by considering all factors.	☐	☐	☐	☐	☐
6.	Performance based budgeting system (PBBS) cost is used before achieving goals.	☐	☐	☐	☐	☐
7.	Performance based budgeting system (PBBS) could be revised to parallel changes on the organizations strategy.	☐	☐	☐	☐	☐
8.	Performance based budgeting system (PBBS) must be parallel with external environment.	☐	☐	☐	☐	☐
9.	Performance based budgeting system (PBBS) utilizing rigid budgeting will reflect inaccuracy in measuring performance.	☐	☐	☐	☐	☐

2- This question is to evaluate your perception related to organizational support in using Performance based budgeting system (PBBS)in your organization. Please state the level of agreement with the statements using the scale given.

No	**Organizational support** • **Organizational Support: (Management and resources)**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	My manager will be visible supportive of the learning of the new Performance based budgeting system (PBBS).	☐	☐	☐	☐	☐
2.	In my University the implementation process will be successful because the management may provide adequate information and training to Performance based budgeting system (PBBS).	☐	☐	☐	☐	☐

3.	In my University, commitment of management is behind successful adoption of the Performance based budgeting system (PBBS).	☐	☐	☐	☐	☐
4.	My superior will allow sufficient time to learn (PBBS).	☐	☐	☐	☐	☐
5	If any special tooling is required to use this Performance based budgeting system (PBBS) appropriately, it will be purchased.	☐	☐	☐	☐	☐
6.	Any accessories needed for the well use the Performance based budgeting system (PBBS) will be purchased.	☐	☐	☐	☐	☐
7.	It is easy to find a resource to help me to solve any problem that I might encounter when using the Performance based budgeting system (PBBS).	☐	☐	☐	☐	☐
	Financial support and resources availability are behind successful learning process and acceptance of the Performance based budgeting system (PBBS).	☐	☐	☐	☐	☐

3- This question is to evaluate your perception related to satisfaction in using Line-item budgeting system (LB). Please state the level of agreement with statements using the scale given.

No	**Satisfaction with Line-item (LB)**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	Line-item is adequate for planning financial position.	☐	☐	☐	☐	☐
2.	Line-item is suitable for planning Cash flows.	☐	☐	☐	☐	☐
3.	Line-item is suitable for evaluating management performance.	☐	☐	☐	☐	☐
4.	Line-item suitable for providing information on non-financial performance.	☐	☐	☐	☐	☐
5.	Line-item is adequate for providing information on financial performance.	☐	☐	☐	☐	☐
6.	Line-item system does not lead to realistic goals.	☐	☐	☐	☐	☐
7.	Line-item is suitable in generating information for decision making.	☐	☐	☐	☐	☐
8.	Line-item system is adequate to allocation of resources.	☐	☐	☐	☐	☐
9.	Line-item is adequate for control of expenditure.	☐	☐	☐	☐	☐

4- This question is to evaluate your perception related to perceived barriers in readniess to adopt in your orgaization. Please statethe level of agreement with the statements using the scale given.

No	**Perceived barriers of Readiness to Adopt PBBS**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	Non Lack of coordination and cooperation between departments.	☐	☐	☐	☐	☐
2.	Non Lack of effective leadership support and commitment amongst senior public officials.	☐	☐	☐	☐	☐
3.	Ease in the procedures for the application of the rules	☐	☐	☐	☐	☐
4.	High cost of development.	☐	☐	☐	☐	☐
5.	Non Lack of quality data (quality of information availability).	☐	☐	☐	☐	☐
6.	Non Lack of knowledge of use (PBBS).	☐	☐	☐	☐	☐
7.	Non Lack of relevant skills	☐	☐	☐	☐	☐
8.	Non Fear of failure.	☐	☐	☐	☐	☐

5. This question is to evaluate your attitude towards change. Please state the level of agreement with the statement using the scale given.

No	**Attitude towards Change**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	Change usually reduces my ability to control what goes on at work.	☐	☐	☐	☐	☐
2.	I usually resist new ideas.	☐	☐	☐	☐	☐
3.	I do not like change.	☐	☐	☐	☐	☐
4.	Change frustrates me.	☐	☐	☐	☐	☐
5.	Most changes at work are irritating.	☐	☐	☐	☐	☐
6.	I usually hesitate to new ideas.	☐	☐	☐	☐	☐
7.	Change usually benefits the organization.	☐	☐	☐	☐	☐
8.	Most of my co-workers benefit from change.	☐	☐	☐	☐	☐
9.	I intend to do whatever possible to support change.	☐	☐	☐	☐	☐
10.	I usually support new idea.	☐	☐	☐	☐	☐
11.	I find most changes to be pleasing.	☐	☐	☐	☐	☐
12.	I usually benefit from change.	☐	☐	☐	☐	☐
13.	I look forward to changes at work.	☐	☐	☐	☐	☐
14.	I am inclined to try new ideas.	☐	☐	☐	☐	☐
15.	Change tends to stimulate me.	☐	☐	☐	☐	☐

16.	I often suggest new approaches to things.	☐	☐	☐	☐	☐
		Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
17.	Change often helps me perform better.	☐	☐	☐	☐	☐
18.	Other people think that I support change.	☐	☐	☐	☐	☐
19.	Being innovative.	☐	☐	☐	☐	☐
20.	I am being quick to take advantage of opportunities.	☐	☐	☐	☐	☐
21.	Having readiness to experiment with new ideas.	☐	☐	☐	☐	☐
22.	Being risk taking.	☐	☐	☐	☐	☐
23.	Being rules oriented.	☐	☐	☐	☐	☐

6. This question is to evaluate the adopting and readniess to adopt in your organization. Please state the level of agreement with the statements using the scale given.

No	**The Adoption (PPBS)**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	PBBS is considered to be effective.	☐	☐	☐	☐	☐
2.	A cost-benefits consideration of changing (PBBS) is justified.	☐	☐	☐	☐	☐
3.	PBBS will be used because it provides financial control.	☐	☐	☐	☐	☐
4.	More effective control of inputs.	☐	☐	☐	☐	☐
5.	More effective control of outputs.	☐	☐	☐	☐	☐
6.	Budgeting decision are more focused.	☐	☐	☐	☐	☐
7.	Better reporting than line-item budgets.	☐	☐	☐	☐	☐
8.	PBBS has clearer objectives.	☐	☐	☐	☐	☐
9.	PBBS process focuses more on the future than on the past in developing budgeting amounts.	☐	☐	☐	☐	☐
10.	The PBBS impact that the budget will have on society is considered.	☐	☐	☐	☐	☐
11.	There is great potential for adopting and applying Performance based budgeting	☐	☐	☐	☐	☐
12.	As Budgets user of the system I will be supporting the adoption and application of the Performance based budgeting	☐	☐	☐	☐	☐

This question is to evaluate your perception towards tolerance of ambiguity for readniess to adopt Performance based budgeting system (PBBS) in your organization. Please state level of agreement with the statements using the scale given

No	**Tolerance of Ambiguity**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	I prefer clear, planning goals and objectives for my job.	☐	☐	☐	☐	☐
2.	I would like to be certain about how much authority I have.	☐	☐	☐	☐	☐
3.	I like to know exactly what my responsibilities are.	☐	☐	☐	☐	☐
4.	I am comfortable working with people without accounting training.	☐	☐	☐	☐	☐
5.	I am comfortable taking action without the knowledge/ approval of my superiors.	☐	☐	☐	☐	☐
6.	I feel there is a right and a wrong way to do almost everything.	☐	☐	☐	☐	☐
7.	A problem has little attraction for me if I do not think it has a solution.	☐	☐	☐	☐	☐
8.	I like to consider new idea even if they later turn out to be a waste of time.	☐	☐	☐	☐	☐
9.	I feel that the way to understand complex problem is to be concerned with their larger aspects instead of breaking them into small pieces.	☐	☐	☐	☐	☐

8-The training is intended to efforts to develop departments within the university and piece by holding training sessions for staff and generating in the area of computer and statistics and cost accounting, budget and programmes at home and abroad

No	**Training**	Disagree Strongly (1)	Disagree Somewhat (2)	Neither Disagree Nor Agree (3)	Agree Somewhat (4)	Agree Strongly (5)
1.	courses are held frequently in the University for staff on modern administrative techniques	☐	☐	☐	☐	☐
2.	university leadership Supports the implementation of programs for the application of the budget performance	☐	☐	☐	☐	☐
3.	training courses are held for staff in the area of cost accounting	☐	☐	☐	☐	☐

Please add your comments here (if any):

End of Survey

Dear Sir /Madam

I am delighted to write this kind letter to you and I hope that you get it in good health. I am a PhD candidate of Faculty of Business and Accountancy at University of Malaya in Malaysia. As part of my studies requirement, I am doing a research study on readiness to adopt Performance-based budgeting (PBB) in Libyan Higher Learning Institutions. The aim of this study is also provide valuable insights and guidance to students, accounts, financers, practitioners and managers to help them in managing the new budgeting system. I would be most grateful if you could spare some time to respond to the attached questionnaire. Please return the completed questionnaire to me. I would like to assure you that your responses will be completely anonymous and strictly confidential and will not be used for any other purposes other than this research. Should you need further clarification, please do not hesitate to contact me on my hand phone 0924808180.

Thanks you for assistance with best regards

ALI JABALLA

PhD candidate

APPENDIX D: MULTICOLLINEARITY TEST

Variable	VIF	Tolerance	Condition Index
OS	1.000	0.922	21.132
SL	1.000	0.939	19.959
TR	1.000	0.958	18.427
RA	1.000	0.970	20.465
BA	1.000	0.963	7.387
TA	1.000	0.999	22.137
ATC	1.000	0.908	19.457
PBBS	-	-	-

APPENDIX E: DESCRIPTIVE for Summated Scores

			Statistic	Std. Error
RA	Mean		4.2917	.01854
	95% Confidence Interval for Mean	Lower Bound	4.2552	
		Upper Bound	4.3281	
	5% Trimmed Mean		4.2894	
	Median		4.2000	
	Variance		.148	
	Std. Deviation		.38526	
	Minimum		3.40	
	Maximum		5.00	
	Range		1.60	
	Interquartile Range		.60	
	Skewness		.361	.117
	Kurtosis		-.628	.234
OS	Mean		4.3767	.02245
	95% Confidence Interval for Mean	Lower Bound	4.3326	
		Upper Bound	4.4209	
	5% Trimmed Mean		4.3962	
	Median		4.2500	
	Variance		.218	
	Std. Deviation		.46670	
	Minimum		2.25	
	Maximum		5.00	
	Range		2.75	
	Interquartile Range		.94	
	Skewness		-.210	.117
	Kurtosis		-.087	.234
RS	Mean		4.3642	.02492
	95% Confidence Interval for Mean	Lower Bound	4.3152	
		Upper Bound	4.4132	
	5% Trimmed Mean		4.3839	
	Median		4.0000	
	Variance		.268	
	Std. Deviation		.51787	
	Minimum		2.00	
	Maximum		5.00	
	Range		3.00	
	Interquartile Range		1.00	
	Skewness		-.136	.117
	Kurtosis		-.209	.234
SL	Mean		1.5602	.02148
	95% Confidence Interval for Mean	Lower Bound	1.5180	
		Upper Bound	1.6024	
	5% Trimmed Mean		1.5547	
	Median		1.5000	

	Variance		.199		
	Std. Deviation		.44653		
	Minimum		1.00		
	Maximum		4.00		
	Range		3.00		
	Interquartile Range		1.00		
	Skewness		.250	.117	
	Kurtosis		.360	.234	
BA	Mean		1.6057	.02133	
	95% Confidence Interval for Mean	Lower Bound	1.5638		
		Upper Bound	1.6476		
	5% Trimmed Mean		1.5952		
	Median		1.6667		
	Variance		.197		
	Std. Deviation		.44338		
	Minimum		1.00		
	Maximum		4.00		
	Range		3.00		
	Interquartile Range		.67		
	Skewness		.256	.117	
	Kurtosis		.728	.234	
TA	Mean		2.6731	.05099	
	95% Confidence Interval for Mean	Lower Bound	2.5729		
		Upper Bound	2.7733		
	5% Trimmed Mean		2.6595		
	Median		2.1111		
	Variance		1.123		
	Std. Deviation		1.05975		
	Minimum		1.00		
	Maximum		4.67		
	Range		3.67		
	Interquartile Range		2.00		
	Skewness		.240	.117	
	Kurtosis		-1.570	.234	
TR	Mean		4.4491	.02333	
	95% Confidence Interval for Mean	Lower Bound	4.4032		
		Upper Bound	4.4949		
	5% Trimmed Mean		4.4528		
	Median		4.3333		
	Variance		.235		
	Std. Deviation		.48486		
	Minimum		3.00		
	Maximum		5.00		
	Range		2.00		
	Interquartile Range		1.00		
	Skewness		.076	.117	
	Kurtosis		-1.644	.234	
ATC	Mean		4.4482	.02171	
	95% Confidence Interval for Mean	Lower Bound	4.4056		
		Upper Bound	4.4909		

	5% Trimmed Mean	4.4444		
	Median	4.3636		
	Variance	.204		
	Std. Deviation	.45122		
	Minimum	3.73		
	Maximum	5.00		
	Range	1.27		
	Interquartile Range	1.00		
	Skewness	.207	.117	
	Kurtosis	-1.782	.234	

APPENDIX F: correlation results among summated study variables

Correlations results among Summated Study Variables

Var.		OS	SL	TR	RA	BA	TA	ATC	PBBS
OS	Pearson Correlation	1	-0,147(**)	0,178(**)	0,308(**)	-0,184(**)	0,013	0,240(**)	0,279(**)
	Sig. (2-tailed)		0,002	0,000	0,000	0,000	0,788	0,000	0,000
SL	Pearson Correlation	-0,147(**)	1	-0,188(**)	-0,212(**)	0,152(**)	0,078	-0,229(**)	-0,246(**)
	Sig. (2-tailed)	0,002		0,000	0,000	0,001	0,107	0,000	0,000
TR	Pearson Correlation	0,178(**)	-0,188(**)	1	0,120(*)	-0,154(**)	-0,017	0,090	0,206(**)
	Sig. (2-tailed)	0,000	0,000		0,012	0,001	0,727	0,062	0,000
RA	Pearson Correlation	0,308(**)	-0,212(**)	0,120(*)	1	-0,193(**)	0,050	0,120(*)	0,173(**)
	Sig. (2-tailed)	0,000	0,000	0,012		0,000	0,302	0,013	0,000
BA	Pearson Correlation	-0,184(**)	0,152(**)	-0,154(**)	-0,193(**)	1	-0,068	-0,314(**)	-0,193(**)
	Sig. (2-tailed)	0,000	0,001	0,001	0,000		0,156	0,000	0,000
TA	Pearson Correlation	0,013	0,078	-0,017	0,050	-0,068	1	-0,076	0,019
	Sig. (2-tailed)	0,788	0,107	0,727	0,302	0,156		0,115	0,699
ATC	Pearson Correlation	0,240(**)	-0,229(**)	0,090	0,120(*)	-0,314(**)	-0,076	1	0,303(**)
	Sig. (2-tailed)	0,000	0,000	0,062	0,013	0,000	0,115		0,000
PBBS	Pearson Correlation	0,279(**)	-0,246(**)	0,206(**)	0,173(**)	-0,193(**)	0,019	0,303(**)	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,699	0,000	

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

* Correlation is significant at the 0.05 level (2-tailed).

APPENDIX G

REGRESSION ANALYSIS

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	OS(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,279(a)	,078	,076	,41855

a Predictors: (Constant), OS

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,347	1	6,347	36,229	,000(a)
	Residual	75,331	430	,175		
	Total	81,677	431			

a Predictors: (Constant), OS

b Dependent Variable: PP

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,267	,213		15,317	,000
	OS	,290	,048	,279	6,019	,000

a Dependent Variable: PPBS

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	SL(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,246(a)	,061	,058	,42243

a Predictors: (Constant), SL

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,944	1	4,944	27,704	,000(a)
	Residual	76,734	430	,178		
	Total	81,677	431			

a Predictors: (Constant), SL

b Dependent Variable:

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	Lower Bound	Upper Bound
1	(Constant)	3,479	,203		17,112	,000
	SL	-,240	,046	-,246	-5,263	,000

a Dependent Variable: PPBS

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	TR(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,206(a)	,042	,040	,42650

a Predictors: (Constant), TR

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,461	1	3,461	19,026	,000(a)
	Residual	78,217	430	,182		
	Total	81,677	431			

a Predictors: (Constant), TR

b Dependent Variable: PPBS

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	Lower Bound	Upper Bound
1	(Constant)	3,479	,203		17,112	,000
	TR	,185	,046	,206	5,263	,000

a Dependent Variable: PPBS

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	RA(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,173(a)	,030	,028	,42925

a Predictors: (Constant), RA

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,449	1	2,449	13,290	,000(a)
	Residual	79,229	430	,184		
	Total	81,677	431			

a Predictors: (Constant), RA

b Dependent Variable: PPBS

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	Lower Bound	Upper Bound
1	(Constant)	3,776	,212		17,825	,000
	RA	,179	,049	,173	3,646	,000

a Dependent Variable: PPBS

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	BA(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,193(a)	,037	,035	,42764

a Predictors: (Constant), BA

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,042	1	3,042	16,633	,000(a)
	Residual	78,636	430	,183		
	Total	81,677	431			

a Predictors: (Constant), BA

b Dependent Variable: PPBS

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,849	,077		62,657	,000
	BA	-,189	,046	-,193	-4,078	,000

a Dependent Variable: PP

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	TA(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,019(a)	,000	,002	,43575

a Predictors: (Constant), TA

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,028	1	,028	,150	,699(a)
	Residual	81,649	430	,190		
	Total	81,677	431			

a Predictors: (Constant), TA

b Dependent Variable: PP

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,455	,233		19,158	,000
	TA	,021	,055	,019	,387	,699

a Dependent Variable: PPBS

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	ATC(a)	.	Enter

a All requested variables entered.

b Dependent Variable: PPBS

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,303(a)	,092	,090	,41533

a Predictors: (Constant), ATC

b Dependent Variable: PPBS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,504	1	7,504	43,500	,000(a)
	Residual	74,174	430	,172		
	Total	81,677	431			

a Predictors: (Constant), ATC

b Dependent Variable: PPBS

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,266	,195		16,755	,000
	ATC	,287	,044	,303	6,595	,000

a Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TA_ATC, OS, TR, SL, BA, RA_ATC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.420[a]	.176	.164	.39794

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.378	6	2.396	15.133	.000[a]
	Residual	67.300	425	.158		
	Total	81.677	431			

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.240	.315		10.275	.000
	OS	.135	.045	.145	2.986	.003
	SL	-.166	.046	-.170	-3.611	.000
	BA	-.067	.047	-.068	-1.408	.160
	TR	.114	.041	.127	2.796	.005
	RA_ATC	.023	.008	.144	2.724	.007
	TA_ATC	.012	.004	.126	2.805	.005

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.240	.315		10.275	.000
	OS	.135	.045	.145	2.986	.003
	SL	-.166	.046	-.170	-3.611	.000
	BA	-.067	.047	-.068	-1.408	.160
	TR	.114	.041	.127	2.796	.005
	RA_ATC	.023	.008	.144	2.724	.007
	TA_ATC	.012	.004	.126	2.805	.005

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	ATC, TA_ATC, TR, OS, SL, BA, RA_ATC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431[a]	.185	.172	.39615

a. Predictors: (Constant), ATC, TA_ATC, TR, OS, SL, BA, RA_ATC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.138	7	2.163	13.780	.000[a]
	Residual	66.540	424	.157		
	Total	81.677	431			

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.138	7	2.163	13.780	.000[a]
	Residual	66.540	424	.157		
	Total	81.677	431			

a. Predictors: (Constant), ATC, TA_ATC, TR, OS, SL, BA, RA_ATC

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.890	.352		8.213	.000
	OS	.146	.045	.156	3.220	.001
	SL	-.167	.046	-.171	-3.649	.000
	BA	-.059	.047	-.060	-1.254	.211
	TR	.113	.041	.126	2.778	.006
	RA_ATC	.003	.012	.020	.257	.797
	TA_ATC	.012	.004	.124	2.763	.006
	ATC	.151	.069	.157	2.201	.028

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TA_ATC, OS, TR, SL, BA, RA_ATC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.420[a]	0.176	0.164	0.39794	0.176	15.133	6	425	0

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.378	6	2.396	15.133	.000[a]
	Residual	67.300	425	.158		
	Total	81.677	431			

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.240	.315		10.275	.000
	OS	.135	.045	.145	2.986	.003
	SL	-.166	.046	-.170	-3.611	.000
	BA	-.067	.047	-.068	-1.408	.160
	TR	.114	.041	.127	2.796	.005
	RA_ATC	.023	.008	.144	2.724	.007
	TA_ATC	.012	.004	.126	2.805	.005

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TR, TA, RA, BA, SL, OS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.391[a]	0.153	0.141	0.40351	0.153	12.773	6	425	0

a. Predictors: (Constant), TR, TA, RA, BA, SL, OS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.478	6	2.080	12.773	.000[a]
	Residual	69.199	425	.163		
	Total	81.677	431			

a. Predictors: (Constant), TR, TA, RA, BA, SL, OS

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.606	.355		10.159	.000
	RA	.001	.056	.001	.012	.990
	OS	.181	.046	.194	3.972	.000
	SL	-.197	.046	-.202	-4.277	.000
	BA	-.113	.046	-.115	-2.433	.015
	TA	.047	.019	.114	2.493	.013
	TR	.114	.041	.127	2.746	.006

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	ATC, TR, TA, RA, SL, BA, OS[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.431[a]	0.186	0.173	0.396	0.186	13.843	7	424	0

a. Predictors: (Constant), ATC, TR, TA, RA, SL, BA, OS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.195	7	2.171	13.843	.000[a]
	Residual	66.483	424	.157		
	Total	81.677	431			

a. Predictors: (Constant), ATC, TR, TA, RA, SL, BA, OS

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.740	.406		6.753	.000
	RA	.003	.055	.002	.051	.960
	OS	.148	.045	.158	3.248	.001
	SL	-.169	.046	-.174	-3.700	.000
	BA	-.061	.047	-.062	-1.291	.197
	TA	.053	.019	.129	2.855	.005
	TR	.114	.041	.127	2.800	.005
	ATC	.193	.046	.200	4.162	.000

a. Dependent Variable: PPBS

Correlations

Correlations

		BA	ATC
BA	Pearson Correlation	1.000	-.331**
	Sig. (2-tailed)		.000
	N	432.000	432
ATC	Pearson Correlation	-.331**	1.000
	Sig. (2-tailed)	.000	
	N	432	432.000

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

Correlations

Correlations

		ATC	TA_ATC	RA_ATC	RA	TA
ATC	Pearson Correlation	1.000	.096*	.784**	.144**	-.142**
	Sig. (2-tailed)		.045	.000	.003	.003
	N	432.000	432	432	432	432
TA_ATC	Pearson Correlation	.096*	1.000	.103*	.066	.967**
	Sig. (2-tailed)	.045		.032	.170	.000
	N	432	432.000	432	432	432
RA_ATC	Pearson Correlation	.784**	.103*	1.000	.724**	-.081
	Sig. (2-tailed)	.000	.032		.000	.092
	N	432	432	432.000	432	432
RA	Pearson Correlation	.144**	.066	.724**	1.000	.036
	Sig. (2-tailed)	.003	.170	.000		.455
	N	432	432	432	432.000	432
TA	Pearson Correlation	-.142**	.967**	-.081	.036	1.000
	Sig. (2-tailed)	.003	.000	.092	.455	
	N	432	432	432	432	432.000

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		ATC	TA_ATC	RA_ATC	RA	TA
ATC	Pearson Correlation	1.000	.096*	.784**	.144**	-.142**
	Sig. (2-tailed)		.045	.000	.003	.003
	N	432.000	432	432	432	432
TA_ATC	Pearson Correlation	.096*	1.000	.103*	.066	.967**
	Sig. (2-tailed)	.045		.032	.170	.000
	N	432	432.000	432	432	432
RA_ATC	Pearson Correlation	.784**	.103*	1.000	.724**	-.081
	Sig. (2-tailed)	.000	.032		.000	.092
	N	432	432	432.000	432	432
RA	Pearson Correlation	.144**	.066	.724**	1.000	.036
	Sig. (2-tailed)	.003	.170	.000		.455
	N	432	432	432	432.000	432
TA	Pearson Correlation	-.142**	.967**	-.081	.036	1.000
	Sig. (2-tailed)	.003	.000	.092	.455	
	N	432	432	432	432	432.000

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

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TA_ATC, OS, TR, SL, BA, RA[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

ModelSummaryry

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.402[a]	0.162	0.15	0.4014	0.162	13.658	6	425	0

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.203	6	2.201	13.658	.000[a]
	Residual	68.474	425	.161		
	Total	81.677	431			

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.590	.353		10.165	.000
	RA	-.003	.056	-.003	-.052	.958
	OS	.178	.045	.191	3.937	.000
	SL	-.197	.046	-.202	-4.328	.000
	BA	-.107	.046	-.109	-2.332	.020
	TR	.113	.041	.126	2.745	.006
	TA_ATC	.014	.004	.148	3.283	.001

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TA, OS, TR, SL, BA, RA_ATC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.416[a]	0.173	0.161	0.3987	0.173	14.818	6	425	0

a. Predictors: (Constant), TA, OS, TR, SL, BA, RA_ATC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.131	6	2.355	14.818	.000[a]
	Residual	67.547	425	.159		
	Total	81.677	431			

a. Predictors: (Constant), TA, OS, TR, SL, BA, RA_ATC

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.191	.318		10.046	.000
	OS	.131	.045	.141	2.901	.004
	SL	-.164	.046	-.168	-3.558	.000
	BA	-.067	.047	-.068	-1.405	.161
	TR	.115	.041	.128	2.814	.005
	RA_ATC	.026	.008	.168	3.225	.001
	TA	.046	.019	.113	2.508	.013

a. Dependent Variable: PPBS

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	TA_ATC, OS, TR, SL, BA, RA_ATC[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: PPBS

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.420[a]	0.176	0.164	0.3979	0.176	15.133	6	425	0

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.378	6	2.396	15.133	.000[a]
	Residual	67.300	425	.158		
	Total	81.677	431			

a. Predictors: (Constant), TA_ATC, OS, TR, SL, BA, RA_ATC

b. Dependent Variable: PPBS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.240	.315		10.275	.000
	OS	.135	.045	.145	2.986	.003
	SL	-.166	.046	-.170	-3.611	.000
	BA	-.067	.047	-.068	-1.408	.160
	TR	.114	.041	.127	2.796	.005
	RA_ATC	.023	.008	.144	2.724	.007
	TA_ATC	.012	.004	.126	2.805	.005

a. Dependent Variable: PPBS

APPENDIX H: LIST OF INTERVIEWEES/KEY RESPONDENTS

(List of In-depth Questions is in Appendix)

1. Could you please explain the budgeting system process in your organization?
2. Does Line-item system help you to achieve your organization's objective and what strengthens and weakness of Line-items budgeting method?
3. 3. Are you satisfied with Line-item system which you use now? If No then why?
4. Do you think that the current system should be changed? If Yes then Why?
5. What change do you expect?
6. Do you think the changes will be useful for your organization?
7. Have you heard about performance based budgeting system (PBBS)?
8. Are you going to support the change in your organization in terms?
9. Do you think the new system (PBBS) is easy to implement?
10. Do you intend to adopt performance based budgeting system (PBBS)?
11. . In your opinion this University is ready to adopt PBBS? If yes why?
12. What are the barriers that will encounter the adoption of PBBS?
13. Are there factors in your University that you think will assist in adopting PBBS?
14. Do you think the PBBS can help your University achieve its objectives?
15. Is the decision to adopt new system is done by your University or other decision makers?
16. What do you suggest should be done in order to improve budgeting system in your organization?
17. Does this University have a Management accounting information system?
18. Does this University have a strategic planning system? If yes, can you explain the strategic planning process?
19. Is your University having enough computers and provides training programs?