

Performance Measurement Systems in Service SME: A Brunei Case Study

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ABSTRACT

The purpose of this study was to investigate the practice of performance measurement systems (PMS) in Small and Medium-sized Enterprises (SME) operating in the service sector in Brunei Darussalam. A further aim was to find the drivers and barriers of PMS adoption for such companies.

Quantitative and qualitative methods were applied in this research. Documentary data, questionnaires, and interviews were used to collect the data. 357 questionnaires were sent out to service SME and a total of 62 responses were received. 29 managers from four case study companies were interviewed and semi-structured questions were used during the interviews. The results from the questionnaires showed that 26 per cent of the sample practice advanced PMS, 16 per cent still use a traditional PMS and the rest use a balanced system. The results of the interviews showed two additional drivers and one additional barrier to those found in the literature review. Business process and external stakeholders were identified as the additional drivers of PMS adoption and the former was also identified as the additional factor that could block such adoption.

The additional findings indicated that organizational strategy, appropriate management style and management experience and qualifications were the core factors that could either drive or block the adoption of PMS. The lack of a clear mission and vision influenced all the other blocking forces. At the same time, the existence of a clear policy, such as a mission and vision statement, influenced the other driving forces. Furthermore, exercising an appropriate management style which takes into account the current organizational culture of the company has a significant positive impact on the acceptance of performance measurement. The employment of a qualified and experienced management team that understands the concept of performance measurement is also valuable in ensuring that the design of the PMS is appropriate and the implementation successful.

A practical framework based on the findings was created to overcome the key identified problems associated with PMS adoption. From these findings, the research results offer both useful and actionable implications for practitioners such as managers and external consultants involved in PMS, particularly in Brunei. Consideration was given to the breadth of the interviews and the use of other documentary data, as well as the limitations of the case study method employed in the research. This should ensure the findings will be useful for companies currently implementing PMS or those intending to in the future. Given the context of this research, the findings will predominantly be of use in developing countries.

DECLARATION

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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The recent author's Publications and Paper Presented

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This paper proposes to empirically investigate the practice of performance measurement systems (PMS) in service sector Small and Medium Enterprises (SME) in Brunei Darussalam. The research will identify the level of PMS adoption in service SME and examine the factors that influence the development of PMS in Brunei Darussalam. It will also investigate differences identified between the empirical evidence and the factors conceptualized from the literature.

This research is academically motivated as gaps in the literature were identified. Bourne *et al.* (2000); Bourne *et al.* (2002); Bititci *et al.* (2004); De Waal & Counet (2009); Garengo *et al.* (2007); Garengo & Bititci (2007); Sousa *et al.* (2006); Turner *et al.* (2005) all investigated factors that influence the success or failure of PMS adoption in SME. Literature on PMS arising from empirical studies of the perspectives of service industry SME is lacking though. As a consequence, the ways in which the characteristics of the service industry influence PMS adoption must be taken into account in the investigation of the research phenomena.

1.2 Area of Concern

Adopting a PMS can bring numerous potential benefits to an organization. It is a system used to help management to make decisions based on their overall performance. A balanced and integrated performance measurement system can be used to better reflect the organization's overall strategy. Nevertheless, in order to capture these potential benefits there are some challenges to be faced and concerns exist about the high rate of failure in PMS adoption initiatives (De Waal & Counet, 2009).

1.3 Background and research context

To date, academic research in the area of PMS is lacking in Brunei Darussalam. However, the trend in the application of PMS techniques, in particular the balanced scorecard, is quite remarkable, especially in the public sector. Various seminars and workshops have been conducted for public servants on strategic planning and the use of balanced scorecards by the government ministries. A publication in the local bulletin on the use of the balanced scorecard by an academician from the local university emphasized the 'need for practitioners to understand the contextual necessities in adopting a balanced scorecard within their organization' (Othman, 2009). However, the development of performance

measurement systems in the private sector in Brunei Darussalam is less well-developed. Furthermore, no academic research on performance measurement has ever been conducted in the country. The problem of investigation is that the extent to which PMS is adopted in Brunei, especially among service SME is unknown and, most importantly, the theoretical explanations for the current situation of PMS adoption are also not documented. PMS adoption for SME in particular has not been empirically ascertained.

Despite the existence of numerous academic articles examining the reasons for the success or failure of PMS adoption, the outcomes of this research will be of value in shedding light on the perspectives within the business culture of a developing country.

1.4 Research Motivations and Significance

The motivation for this research arises from the gap identified in the literature in respect of problems encountered by SME in their PMS initiatives. One significant question that surfaced was whether the inherent characteristics of a small organization dictate that the PMS will necessarily be less developed. A further question was whether there might be other factors influencing adoption. The lack of empirical evidence in the literature on PMS practices in Brunei added to the puzzle. This highlighted the lack of reference points for the researcher, as well as for local businessmen and academicians, to develop understanding of which organizational factors contribute to the successful adoption of PMS.

The literature review shows studies on a large variety of performance measurement systems, developed by various authors in their attempts to provide guidance for practitioners to better evaluate their organizations. However, the empirical evidence was based on businesses in the developed countries. Contemporary PMS were developed as a result of the failures of the traditional finance-based and non-future oriented frameworks. Subsequently, these systems were adopted by various organizations in both public and private sector but the application of the new systems was not achieved without problems. Studies have shown that there were successes and failures in implementing these systems (De Waal & Counet, 2009). Further research was conducted to investigate why some organizations succeeded while others failed in their attempts to adopt the PMS as prescribed in the literature (Bourne *et al.*, 2002).

This thesis will contribute to a stream of literature that examines the drivers and barriers of PMS adoption through investigation of the characteristics of both SME and the service industry. Due to the distinct characteristics of SME and the service industry compared with larger corporations and the manufacturing industry respectively, factors that drive or hinder PMS initiatives may differ. As a result, this research is also expected to broaden the pool of literature on performance measurement in SME and the service industry.

1.5 Aim and Objectives of the research

The main objective of the study is two-fold: to empirically ascertain the patterns of PMS adoption among service sector SME in Brunei and to seek explanations for the established patterns by investigating factors that drive and hinder the successful adoption of PMS in these organizations. Examination of the perceptions of owners and managers, through interviews and observation of service SME, will help to arrive at a better understanding of the organizational factors that influence PMS adoption. This will allow recommendations for future practice to be made.

For the purpose of this research, the term drivers refer to factors that help and enable a successful PMS adoption. Barriers refer to those factors that impede PMS adoption.

Consequent to the research aims, this research comprises the following objectives:

1. To investigate the current pattern of PMS adoption by the service sector SME in Brunei.
2. To develop categories of generic drivers and barriers of adopting PMS based on the literature.
3. To develop a conceptual framework for PMS adoption.
4. To identify and examine the drivers and barriers of PMS adoption.

1.6 The Research Questions

The key themes identified as a result of the literature investigation and objectives of this thesis have resulted in the development of the following research questions.

RQ1: "What is the current level of PMS adoption by the service sector SME in Brunei Darussalam?"

RQ2: "How do organizational factors influence the adoption of PMS in service sector SME of Brunei Darussalam?"

The research aims to answer the research problem of why some service SME has been able to adopt a PMS while others have not.

1.7 Theoretical Framework

As previously explained, this research involves the drivers and barriers of PMS adoption by service sector SME in Brunei. To understand these influences, a conceptual framework has

been developed to explain the dimensions which are to be studied. The framework is used to aid the research process. This will be addressed again in Chapter Two.

1.8 The Structure of the Thesis

The study is presented in seven chapters. This introductory chapter provides the rationale for the study; describes the problem and the objectives and outlines the research questions. The organization of the remaining chapters is detailed below.

Chapter Two offers a critical review of relevant literature and describes the conceptual framework of this thesis. This chapter introduces the concepts of business strategy and performance measurement systems. Seven models of PMS are critically assessed, with a summary of the operation provided together with a model. Peer review is then assessed and other strengths and weaknesses identified. The theoretical findings are analyzed to formulate the research questions. After this process, a list of best practices of performance measurement and factors that push firms towards adoption of performance measurement systems is compiled, based on the findings from the literature review. The concept for the six influencing factors of PMS adoption level is also presented.

Chapter Three provides an overview of the research process and explains the ethical issues involved. It explains and justifies the research paradigm, methodology and methods. This chapter briefly examines the different types of research paradigm, methodologies and the available methods of data collection. This research adopts an interpretivist epistemological stance with case study as the methodology. Both qualitative and quantitative methods of data collection have been employed, through the use of questionnaires and face-to-face interviews. Documentary data was also used. The data sampling and the research instruments are also explained and justified. The analysis methods that were adopted are also outlined in this chapter.

Chapter Four comprises the analysis of the collected quantitative data - the questionnaire results - and addresses the first research question of this paper. Firstly, the background of the samples is presented to give an overview of the demographic distribution. Cluster analysis was run to answer the first research question.

Chapter Five analyses the findings of the collected qualitative data - the interviews with the management team of the four case companies in Brunei Darussalam. This chapter describes the four companies, each of which operates in a different industry and is considered successful in their respective activities. An overview of their current performance measurement systems is given and they are also evaluated in terms of the six investigated factors that influence the adoption of their PMS.

Chapter Six presents the data from the questionnaires, interviews and the secondary sources. The findings of Chapters Four and Five of the research are investigated to ascertain if the analysis answers the research questions stated in Chapter Two. This chapter examines each of the proposed six best practices of PMS as well as the six influencing factors of PMS adoption in relation to the case study companies to confirm if all of these exist and are relevant. If this is the case, this chapter will investigate how these factors operate within each of the four organizations and its relative importance. It will also investigate factors and practices that were not mentioned in the literature but were found in the case studies.

Chapter Seven offers the conclusion of the thesis and the resulting recommendations. It summarizes the literature review, the research methodology, analysis and discussions of the collected data. The contributions of this thesis in furthering knowledge are also explained and justified.

1.9 Chapter Conclusion

In looking for answers to the difficulties the researcher faced in implementing a PMS in the context of small businesses, it became evident that there was insufficient empirical evidence in relation to performance measurement in SME and in developing countries. The methodology adopted to address this gap in the literature has been outlined in this section. In the next chapter, the literature on performance measurement systems, small and medium-sized enterprises, the service sector and organizational factors is reviewed. A conceptual framework for use in the data collection and analysis phases of this thesis will be developed.

Chapter 2:

Literature Review

2.1 Introduction

This chapter introduces the concepts of business strategy and performance measurement systems. Seven models of PMS are critically assessed. For each system, the operation is summarized and a model provided. Peer review is then assessed and other strengths and weaknesses identified. The theoretical findings are analyzed to formulate the research questions. After this process, a list of best practices of performance measurement and factors that push firms towards adoption of performance measurement systems is compiled based on the literature research. The concept for the six influencing factors of PMS adoption level is also presented.

2.2 Business Strategy, Business Intelligence and Performance Management

The aim of performance management is to gear the resources of the organization towards the achievement of its short- and long-term strategy. The strategic goals are defined through management and analytical processes and performance is measured and managed against these goals. This is illustrated in Figure 1 below. Bowman and Asch (1996) identify the content of business strategy as the aims and their rationale while the process is the way in which the strategy has come about. They outline three levels of strategy; corporate, business unit and operational levels.

Corporate strategy establishes the overall purpose of the business and the scope it has to meet the expectations of the company's shareholders. It is the guiding principle of decision-making within the organization. At the business unit level, the function of strategy is to look at how the company can compete successfully in its given markets and decisions at this level are concerned with factors such as choice of products and how to maximize advantage over competitors. The focus of operational strategy is to ensure that each part of the business is optimized to deliver the objectives set at the higher levels. Decisions here involve use of resources, processes and people.

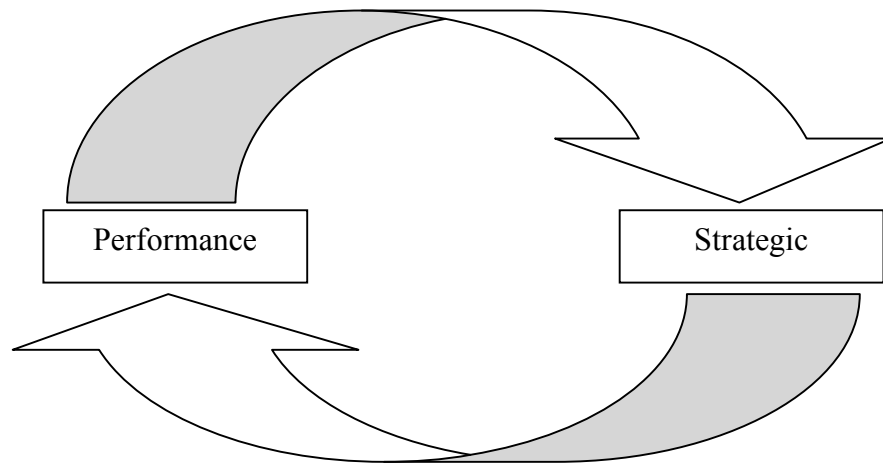


Figure 1. - The circle of performance measurement and strategic planning
(Source: Dusenbury, 2000)

Stephen and Marc (1992) define performance management as an intervention by management to improve and direct the performance of the organization towards its desired state. It is supported by performance measurement, which deals with the evaluation of results. Such measurement is enabled by the use of business intelligence systems. The term “*business intelligence*” was first used by Dressner (1989) to describe fact-based decision-making processes. Business intelligence systems bring together tools for collecting, storing, accessing and analyzing data and are therefore crucial in allowing informed decisions to be made.

2.3 The Development of Performance Measurement Systems

Neely (1998) describes a performance measurement system as something which allows informed decisions to be made as a result of the analysis of the success of previous actions through the collection and appropriate use of accurate data. The importance of IT in this process was emphasized by Keung *et al.* (in Sharma and Bhagwat 2006:11). A performance measurement system is used by an organization not just to determine whether its objectives have been met but also as a means of comparing the performance with that of its competitors. A survey carried out by De Toni and Tonchia in 2001 identified three main uses: overseeing activities, overseeing human resources and providing a means of benchmarking. However, Franco-Santos *et al.* (2007) found that there was no common definition of what constitutes a performance measurement system. The authors found that each researcher devised and used their own definition. Nonetheless, there are common features, which will be described later in the section.

Traditional performance measurement systems, which were in use from the 1880s right up to the 1980s, focused on financial measures such as net profit, return on investment and productivity. They were tools for monitoring and controlling rather than for motivating employees or promoting improvement. Mc Adam *et al.* (2008, p. 1155) identified their use as a means of collecting performance information at set intervals to track changes and trends in that performance. The weakness of such systems was their failure to investigate the impact of non-financial measures on overall performance (Brignall and Ballantine, 1996). Ghalayini *et al.* (1997) also noted that the financial reports were usually too old to be useful. Traditional systems were also criticized for penalizing poor performance at individual and business unit levels rather than encouraging improvement throughout the organization (Kaplan and Norton, 1996; Neely *et al.*, 1997).

From the 1980s onward a more balanced approach between financial and non-financial measures emerged and, after 2000, the literature shows the development of integrated systems. In the later models, measurement is seen as a means to promote continuous improvement through learning and discussion rather than to punish (De Toni and Tonchia, 2007; Gronholt and Martensen, 2009; Hudson *et al.*, 2001; Lima *et al.*, 2009; Sole, 2009). These developments were prompted by the adoption of various management tools such as Total Quality Management (TQM), Just-in-Time (JIT), Lean Management and Economic Resource Planning (ERP). However, as Barker (1995) pointed out, the impact of these tools did not show up in the accounting reports generated by the traditional forms of performance measurement.

The other factors which drove the creation of more reliable performance measurement systems included changes in business models, developments in information technology (IT) and the trend towards globalization. The integration of performance measurement into other systems within the organization made feasible by improved information technology, allows the transfer of performance measurement into performance management. Euske and Zander (2005) noted that, as the business environment continues to change, so performance measurement would continue to evolve to enable stakeholders to understand their organization. In the following sections, some of the models available to the organizations which are the subject of this study are described.

2.4 Contemporary Performance Measurement Systems

Since Kaplan and Johnson published *Relevance Lost* in 1987, many frameworks intended to help organizations achieve better evaluation have been developed. This section provides an overview of the most frequently cited of these.

2.4.1 The Performance Measurement Matrix

This was the first attempt to develop a system that took into account financial and non-financial metrics, which the authors, Keegan *et al.* (1989) term cost and non-cost performance measures. Their framework also distinguishes internal and external measures.

The matrix aims to convert the strategic goals of the company into departmental objectives and then further into individual management actions. The framework is to be used to work out an appropriate set of measures to evaluate the results of the actions. The four areas to be assessed are outlined below:

- i. Internal non-cost measures, including design cycle time, percent on-time delivery and number of new products.
- ii. Internal cost measures – for design, materials and manufacturing.
- iii. External non-cost measures such as numbers of repeat buyers, customer complaints and market share.
- iv. External cost measures including competitive cost position and relative research and development expenditure.

	Non-cost	Cost
External	<ul style="list-style-type: none">• Nos. repeat buyers• Nos. customer complaints• Market share	<ul style="list-style-type: none">• Competitive cost position• Relative R&D expenditure
Internal	<ul style="list-style-type: none">• Design cycle time• Per cent on-time delivery• Nos. new products	<ul style="list-style-type: none">• Design cost• Material cost• Manufacturing cost

Figure 2. – The Performance Measurement Matrix (Source: Keegan *et al.*, 1989)

Although the authors advocate five distinct areas to consider in the selection of measures – quality, customer satisfaction, speed, product/service cost reduction and cash flow from operations – they offer no suggestions on how to refine and integrate the measures. Neely *et al.* (2002) point out that the main weakness of the matrix is the failure of its creators to analyze the links between the different performance measures. Several authors have

subsequently noted the importance of delineating the cause and effect relationship between the financial and non-financial measures (Euske and Zander, 2005; Kaplan and Norton, 1996; Speckbacher *et al.*, 2003; Tangen, 2004). In summary, the literature suggests that the lack of explanation offered by Keegan *et al.* on the cause and effect relationship renders their framework inadequate in comparison with its successors.

2.4.2 The SMART Performance Pyramid

The Strategic Management Analysis and Reporting Tool (SMART) Performance Pyramid was created by Lynch and Cross in 1991 from their research at Wang Laboratories Inc. in response to the MIT (Massachusetts Institute of Technology) Commission on Industrial Productivity Best Practices.

The authors produced a four level pyramid designed to link strategy with operations. At the top of the pyramid, corporate vision looks forward in order to define markets and determine how the company will compete. It looks at areas such as pricing, product innovation and after-sales service. The objectives established are concerned with both external success and internal efficiency. In the short-term, they cover matters like profitability and cash flow, while the long-term goals are growth and market position. To assess the outcomes, measures which relate to financial and non-financial aspects are needed within each business unit. The authors advocate that the measures should reflect overall customer satisfaction as the main goal.

The business operating systems in the middle layers of the pyramid cut across departmental and functional boundaries and are geared to the specific objectives of customer satisfaction, internal flexibility to accommodate necessary changes and productivity. At the foundation level, the objectives are increased quality and shorter delivery times, in addition to decreased cycle time and reduced waste.

The four levels of the pyramid – the departmental and work centers, the business operating systems, the business units and the corporate vision – all fit together to ensure the objectives are achieved. The strategic objectives are based on customer priorities and translated from the top down while the measures, in the form of quality, delivery, cycle time and waste, are taken from the bottom up and can be used at departmental level on a daily basis.

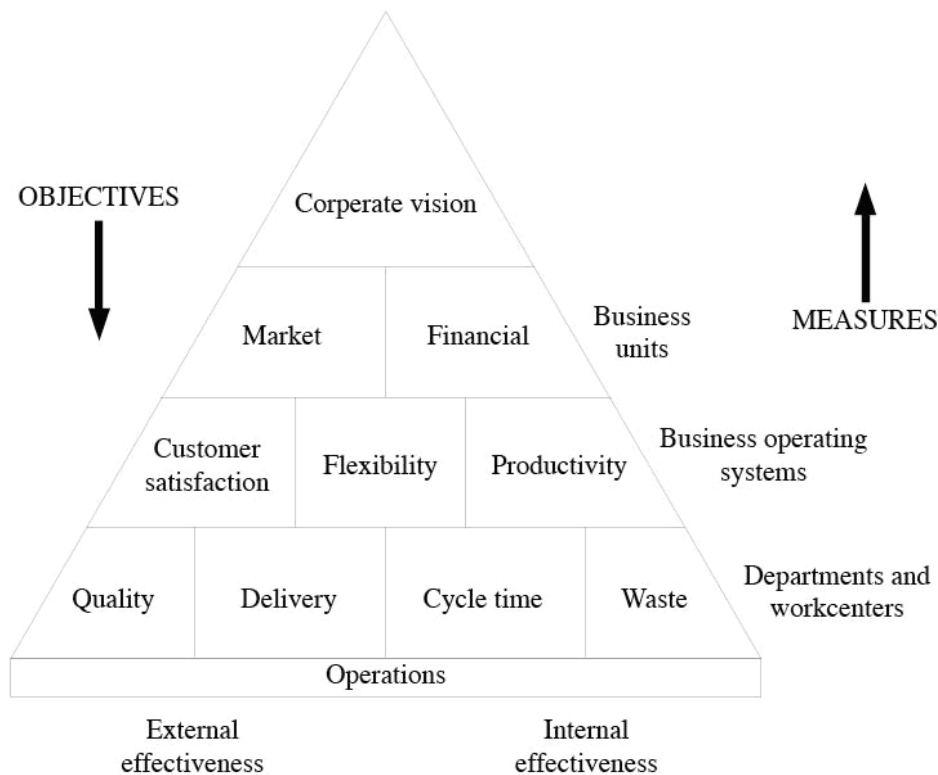


Figure 3. - SMART Performance Pyramid (Source: Lynch and Cross, 1991)

Neely *et al.* (2000) identified the advantage of this framework as its ability to link a hierarchical view of business performance measurement with a business process view. The interests of external stakeholders are also considered in this system.

Other commentators, however, have criticized the framework for its failure to identify the key performance indicators (Ghalayini *et al.*, 1997; Hudson *et al.*, 2001bb). They also add that it fails to integrate the concept of continuous improvement in an explicit way. Nevertheless, through the diagram, Lynch and Cross have *implied* integration of the notion of continuous improvement and their framework clearly explains the cause and effect relationship between the measures they have selected.

2.4.3 The Results and Determinants Framework

The Results and Determinants Framework developed by Fitzgerald *et al.* in 1991 with funding from the Chartered Institute of Management Accountants (CIMA) deals with the weakness that Neely (2000) identified in the performance management matrix, which is its failure to make explicit the links between different aspects of performance. The case studies were service sector businesses, which the authors classified as professional, retail and mass services, and included large organizations such as Barclays Bank and Andersen Consulting rather than SME.

Fitzgerald *et al.* recognized the need for performance measures to be linked to corporate strategy and outlined three elements for their proposed model. Firstly, they suggested a control model within which performance measurement is positioned. Secondly, they outlined the need for a recommended level of organizational analysis for performance measures and lastly, a range of dimensions for performance measurement. In the control model, both feed-forward and feedback control are used, with performance measurement positioned in the latter. The model demonstrates how the performance measurement system is part of an overall organizational control system, as illustrated in the diagram below.

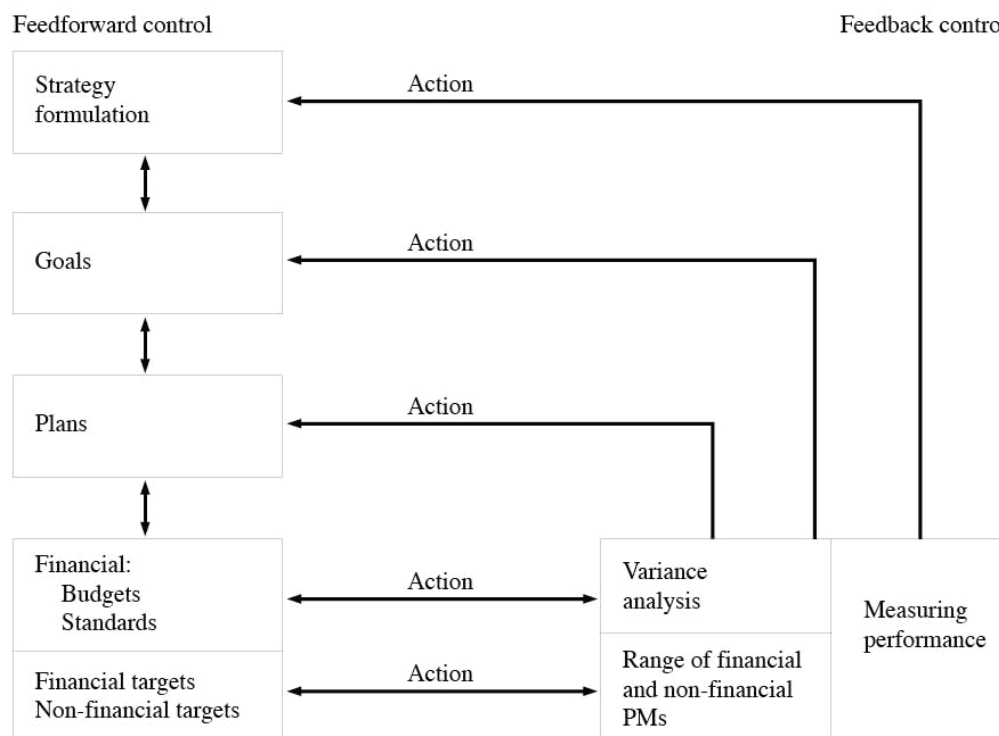


Figure 4. - Organizational Control System (Source: Fitzgerald *et al.*, 1991)

Recognizing that businesses compete on many factors besides profit and cost, Fitzgerald *et al.* identified six performance areas to be measured. The “results” factors, which are lagging indicators of performance, are financial performance and competitiveness while the “determinants”, which are leading indicators, are resource utilization, quality, innovation and flexibility.

Results	Financial performance
	Competitiveness
Determinants	Quality
	Flexibility
	Resource utilization
	Innovation

Figure 5. - The Results and Determinants Framework (Source: Fitzgerald *et al.*, 1991)

The advantage of the system is that it makes it clear that the results obtained are based on past performance in relation to some of the determinants, thus reflecting the need to identify drivers of performance to enable the company to reach its desired performance targets. This also allows the organization to identify “trade-offs” between the measures, which can then be managed during the strategy formulation stage (Brignall & Ballantine, 1996). However, Hudson *et al.* (2001) argue that the framework is unbalanced as it overlooks both customers and Human Resources as dimensions of performance.

2.4.4 European Foundation for Quality Management (EFQM) – Business Excellence Model

This organization was founded in 1988 and its Business Excellence Model was developed in 1991 and has similarities with the model proposed by Fitzgerald *et al.* The framework consists of two sets of performance factors termed “enablers” and “results”. Neely *et al.* (2000) describes the enablers as levers which allow managers to manoeuvre towards the desired outcomes.

The model, which is a cause and effect diagram, comprises five enablers and four results criteria. The enablers are identified as leadership, strategy, people, partnerships and resources and processes, and products and services. The results are viewed from the four perspectives of people, customers, society and key performance. The model is underpinned by eight concepts of business excellence, known as “red threads”, which run through it.

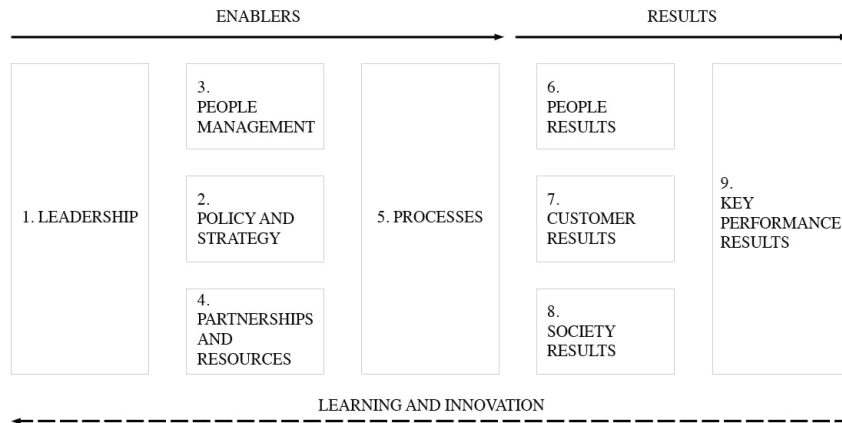


Figure 6. - EFQM – Excellence Model (Source: www.efqm.org)

A mechanism termed “RADAR logic” incorporates continuous learning and improvement into the model. EFQM claim that the framework provides a systematic review of an organization, which also allows it to compare its performance with that of others within the same industry and even with organizations in different industries.

A criticism of the model is that it is difficult to put into practice and explicit guidance on use is lacking (Neely *et al.*, 2000). The terminology is very much open to interpretation and, for each heading, an organization could select any one of a number of difference performance indicators. The utility of the model will thus depend on the selection of appropriate measures.

Dahlgaard-Park (2009) claims that, while it would be possible to quantify these intangibles statistically, limitations to the statistical model used would still exist. Notwithstanding these criticisms, the framework has been empirically validated as having the operational requirements of a TQM framework, with its emphasis on achieving excellence in results (Bou-Llugar *et al.*, 2009:19).

2.4.5 The Balanced Scorecard

This is one of the most widely recognized performance measurement systems. It was originally developed by Kaplan and Norton in 1992 and is intended to provide a summary of information relevant to the manager reading it, enabling them to assess if performance is meeting expectations and to focus attention on failing areas. It is also designed to co-exist with strategic planning systems. In the model, measures are selected from four perspectives – financial, customer, internal business processes and learning and growth – and then targets are attached.

Initial criticism came from the academic community and related to the empirical nature of the scorecard. It was also pointed out that it lacked guidance on how to justify the choice of measures. Kaplan and Norton responded to this by revising the model to take account of cause and effect relationships, developing a strategy map to illustrate the links across the four perspectives (Kaplan and Norton, 1996). The third generation of the scorecard incorporates use of a destination statement for which strategic activities and outcomes can be decided on.

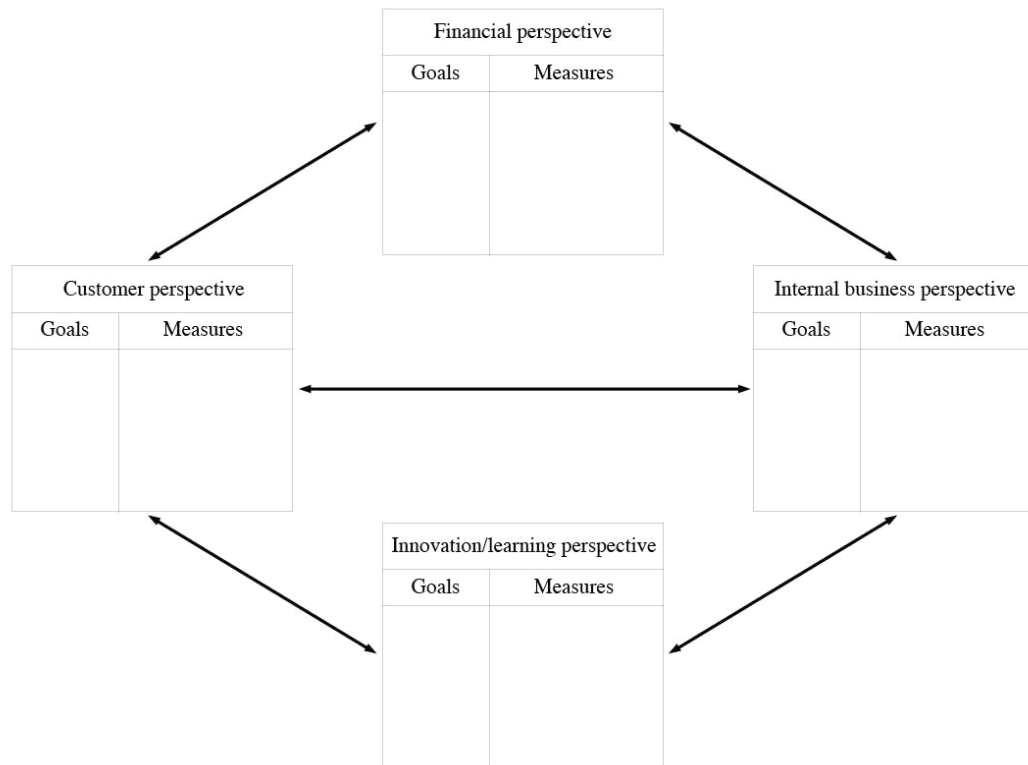


Figure 7. - The Balanced Scorecard (Source: Kaplan and Norton, 1992)

The Balanced Scorecard maintains the financial aspect as the main target of performance measurement but, as Tangen (2004) notes, it also monitors the capacity of the company to build or acquire intangible assets for future growth through operational non-financial measures. Other models, notably the Performance Prism developed by Neely and Adams (2001) address the needs of stakeholders more explicitly than the Balanced Scorecard does but Kaplan and Norton rejected the inclusion of stakeholders in the model (1996:35). They argue that the needs of regulators, and the public particularly, should be handled outside the framework, claiming that a specific compliance requirement tool would be more appropriate for this.

Ghalayini *et al.* (1997) argue that the use of the scorecard is mostly applicable at business unit level rather than at operational level and further criticize the framework for its focus on monitoring and controlling as opposed to promoting continuous improvement. This claim is

supported by the empirical findings of Speckbacher *et al.* (2003:377) in their study of organizations in German-speaking countries. Kaplan and Norton's stated intentions for the model do seem to contradict both Ghalayini *et al.*'s argument and Speckbacher *et al.*'s findings. Rich (2007) found that managers do not rate the different performance measures equally, which leads to biases in their performance analysis and inaccurate and inappropriate decision-making. The lack of integration between the top level of the company, the strategic scorecard and measures at operational level can also make it difficult for the organization to put strategy into practice, according to Brignall and Ballantine (1994). Regardless of the criticisms leveled at the Balanced Scorecard, research undertaken by Bain and Company (2010) indicates that it is the most widely adopted system in the UK.

2.4.6 The Integrated Dynamic Performance Measurement System

With the advent of new management tools like TQM and JIT, came a need for further review of performance measurement systems to examine the success of these tools and their impact on performance. Ghalayini *et al.* (1997) pointed out the inadequacy of the systems in operation to deal with the ever-changing manufacturing environment. They argued further that the existing models did not promote continuous improvement and lacked feedback channels to support improvements. In short, the systems were not dynamic. The model they proposed – the Integrated Dynamic Performance Measurement System (IDPMS) – aimed to address the weaknesses in other models.

The framework integrates three main areas of a company; management, process improvement teams and the factory shop floor. Ghalayini *et al.* (1997) describe management as incorporating the general management departments as well as marketing, engineering, manufacturing, finance and accounting. It is at this level the general and specific areas of success to be used within the system are identified. The process improvement teams comprise members from management and the shop floor and their purpose is to improve the system's operational and cost performance, selecting performance indicators to achieve this. Finally, the shop floor includes those departments directly related to the manufacture of products, so includes purchasing, production, quality control and warehousing. At this level, data on the daily operations is collected and analyzed with respect to general and specific performance targets.

The three areas are linked through specification, reporting and dynamic updating of the defined areas of success; performance measures and standards. The links facilitate the continuous improvement process. The system is illustrated diagrammatically below:

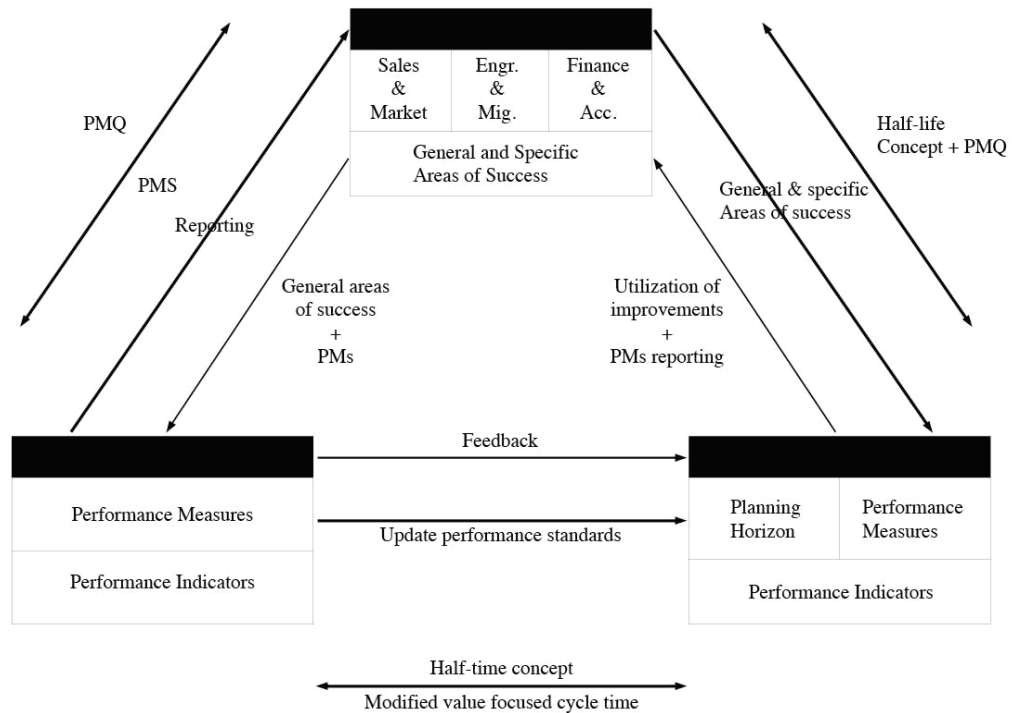


Figure 8. - Integrated Dynamic PMS (Ghalayini et al., 1997)

The framework illustrates how an improvement initiative in one sector can have an impact on other parts of an organization, incorporating both the cause and effect relationship and the concept of continuous improvement. Ghalayini *et al.* (1997) show that management does not have to depend entirely on financial justification methods in analyzing improvements made, which is a useful revelation as often the benefits can be difficult to quantify financially.

This framework manages to integrate the corporate objective with the operational performance indicators. It also manages to incorporate the continuous improvement process within the framework; something which had been lacking in previous frameworks. However, according to Tangen (2004, p.736), most of the frameworks still fail to provide any practical guidance in realizing any specific measures, especially at the operational level.

2.4.7 The Performance Prism

Developed by Neely and Adam in 2001, the Performance Prism incorporates the needs of stakeholders who interact with the organization into the performance measurement model. The authors argue that groups such as employees, suppliers, regulators and the community also affect project performance. In contrast to other systems, strategy is derived from the measures. This means the strategy, process and capability aspects are derived from consideration of the requirements of stakeholder satisfaction. The model also allows for the

exploration of reciprocal benefits between organizations and stakeholders, taking into account such factors as employee commitment.

The prism itself consists of five inter-related facets. In each facet, there are questions which must be answered before consideration can be given to the next stage. These are outlined below:

1. Stakeholder satisfaction – “Who are the stakeholders and what do they want and need?”
2. Strategy – “What are the strategies we require to ensure the wants and needs of our stakeholders are satisfied?”
3. Processes – “What are the processes we have to put in place in order to allow our strategies to be delivered?”
4. Capabilities – “What are the capabilities we require to operate our processes?”
5. Stakeholder Contribution – “What do we want our stakeholders to give in return for maintaining those capabilities?”

The model is represented diagrammatically below:

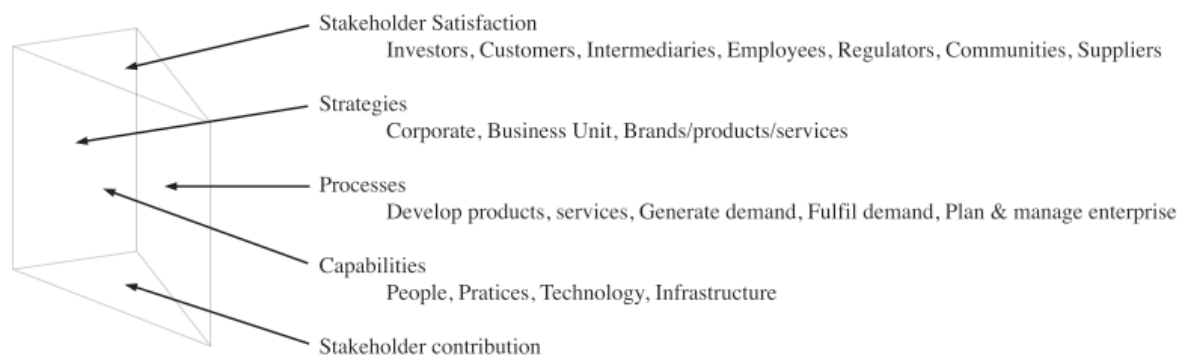


Figure 9. - The Performance Prism (Neely and Adam, 2001)

The Performance Prism was not received without criticism. Medori and Steeple (2000) and Tangen (2004) argue that the necessary guidance for the selection of performance measures is lacking and that little or no consideration is given to the performance measurement system previously adopted by the organization, in contrast with the IDPMS developed by Ghalayini *et al.* (1997). However, Najmi *et al.* in their conceptual paper of 2012, propose a ‘Business Process Review’ (BPR) and Performance Measurement System Review (PMSR) framework specifically for those companies which have adopted the system to evaluate the working of the Performance Prism.

2.4.8 Summary

In relation to the primary research in this study, performance measurement systems will not be identified by name but rather categorized as traditional, balanced or integrated. The literature on contemporary systems clearly indicates that most were developed with the needs and experiences of large manufacturing companies in mind (Parameshwaran *et al.*, 2009). Given the different characteristics and needs of large and small to medium-sized companies, it is useful to explore whether the principles used in the models outlined are applicable in such organizations. The next section will briefly examine attempts made by researchers to develop models for use in both the service industry and in SME.

2.5 Performance Measurement in SME and in the Service Sector

2.5.1 Definitions of SME

Definitions of what constitutes an SME vary widely both between countries and at national level. These differences are attributable to the different legal, statistical and organizational requirements, each of which has its own purpose in the economy (Strathclyde University, 2011).

A study conducted by Hall (2002) shows that within the Asian Pacific Economic Co-operation group, while each member country has its own definition, there is general agreement that SME employ fewer than 100 people. Table 1 shows that, with exception of Chinese Taipei, all of the selected APEC countries use the term “employment” as a reference in defining SME.

Table 1. Summary of the Main Definitions of SME in Selected APEC Economies

Country	Definition of SME	Measure
Australia	Manufacturing - fewer than 100 employees. Services - fewer than 20 employees	Employment
Canada	Manufacturing fewer than 500 employees Services fewer than 50 employees	Employment
PR China	Varies with industry, usually fewer than 100 employees	Employment
Indonesia	Fewer than 100 employees	Employment
Japan	Fewer than 300 employees, or ¥10 million assets Wholesaling - fewer than 50 employees, ¥30 million assets Retailing - fewer than 50 employees, ¥10 million assets	Employment Assets
Korea	Manufacturing - fewer than 300 employees Services - fewer than 20 employees	Employment
Malaysia	Varies. Less than RM 2.5 million and fewer than 75 employees. Definitions are for SMI. Different for <i>Bumiputera</i> (Natives) enterprises	Shareholders Funds Employees
The Philippines	Fewer than 200 employees, P 40 million	Assets Employment
Singapore	Manufacturing - less than S\$12 million fixed assets	Fixed Assets

	Services - Fewer than 100 employees	Employment
Chinese Taipei	Manufacturing - less than NT\$ 40 m paid up capital, and less than total assets of NT\$120 m. In business, transport, and other services - sales of less than NT\$ 40 m.	Paid-up capital, assets and sales
Thailand	Fewer than 200 employees for labor intensive Less than 100m Baht for capital intensive	Employment Capital
USA	Fewer than 500 employees	Employment

Source: *(APEC and SME POLICY: Suggestions for an action agenda by Chris Hall, University of Technology, Sydney, 2009)*

The majority of EU countries have adopted the legal definition recommended by the European Commission (Recommendation 2003/361/EC). This defines SME as organizations having fewer than 250 employees and an annual turnover of less than 50 million euro. This is shown in the table below.

Table 2. EU Recommended Definition of SME

Enterprises	Employees	Annual Turnover	Annual Balance Sheet	Autonomous
Micro Enterprise	1 to 9	2 milliom euro	2 milliom euro	25% or more of the capital or voting rights of another enterprise
Small Enterprise	10 to 49	10 milliom euro	10 milliom euro	
Medium Enterprise	50 to 249	50 milliom euro	43 milliom euro	
Large Enterprise	More than 250	50 milliom euro	43 milliom euro	

Source: OECD (2004)

This research adopts the A.P.E.C. definition, which has as its common point a staff level of fewer than 100 employees. This is appropriate as the case studies for this paper operate within the ambit of that organization.

2.5.2 Characteristics of SME

Hudson *et al.* (2001b) identify several problems which typify SME. These relate to their smaller size vis-à-vis the larger organizations they compete with, the most significant being their limited ability to raise funds from the public. For SME, investment is likely to come from the pockets of the owners or from loans from financial institutions, which require collateral and attract high interest payments. Given the significant contribution that SME make to an economy, government support is often available. Although this support is well-intentioned, accessing it can involve SME in lengthy bureaucratic processes, which may have a negative effect on their operations (Pagano and Schivardi, 2003).

In addition, as Longenecker *et al.* (1994) point out, SME are unlikely to enjoy good credit terms from their suppliers. A relationship of trust has to be established, so new entrant SME can find the first few years of operation difficult.

A further consequence of the SME' lack of financial clout is their inability to offer the best salaries and benefits. They are thus constrained in their attempts to attract highly skilled employees or to send existing staff for training. The consequence of this is that many SME lack managerial and technical skills (Gadenne and Sharma, 2009; Hudson *et al.*, 2001b; Pickle and Abrahamson, 1984). The relative scarcity of highly skilled and qualified personnel may affect the quality of the company's products or services. It may also be the case that SME do not have the money necessary to take full advantage of new information technology. Meredith and Frant (1982) mention this shortcoming and note that it affects the ability of SME to penetrate new markets.

The lower production capacity and smaller range of products than their larger competitors make SME more vulnerable to changing customer demand. With their more limited ability to control their competitive position, SME must be adaptable to market changes (Gadenne and Sharma, 2009; Hudson *et al.*, 2001b). Many SME are owner-managed and, in some cases, the strategy of the business is informal as control rests solely in the hands of the owner. This may result in business decisions being clouded by personal interest rather than focused on the overall long-term interests of the firm (Hudson *et al.*, 2001b).

2.5.3 Definitions of the Service Industry

The most concise definition of service is that offered by Lovelock and Wright (2002:6) which describes it as, *"An act or performance that creates benefits for customers by bringing about desired change on, or on behalf of, the recipient."* Lovelock, Vandermerwe and Lewis (1999) point out that the performance of a service is intangible. Fitzgerald *et al.* (1991) classified the service industry into three types following their study into the processes involved in the provision of services, as shown in the diagram below.

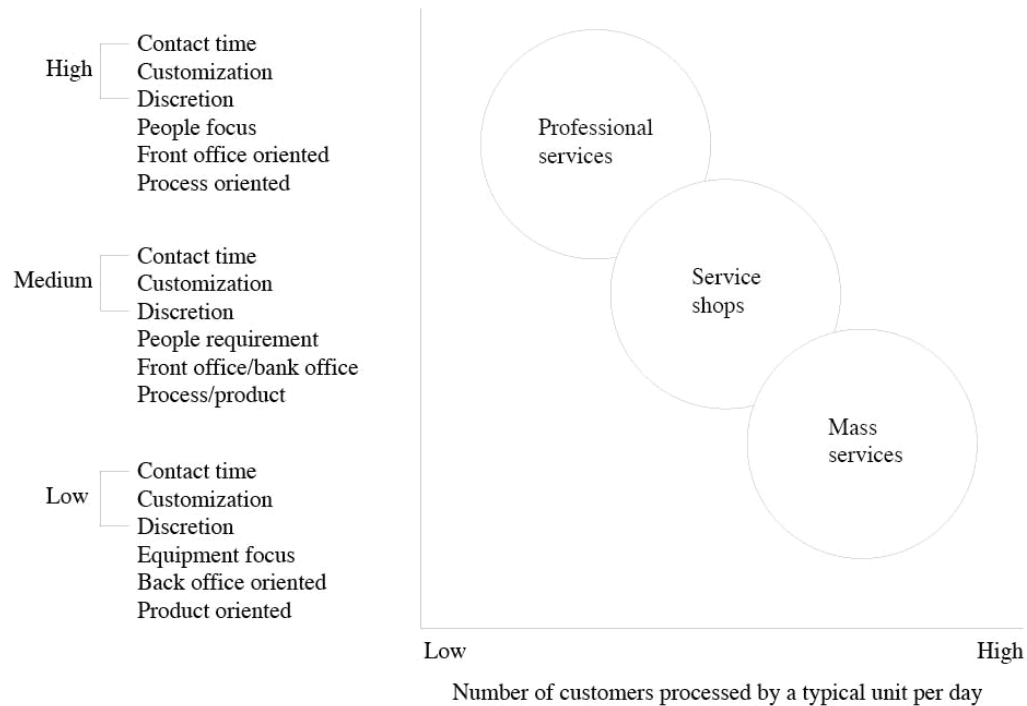


Figure 10. - Archetypes of Service Sectors (Source: Fitzgerald *et al.*, 1991)

The first classification, professional services, has high contact time with customers and high customization to the customers' needs and specifications. While interaction levels are high, the numbers of customers processed per day is low (Fitzgerald *et al.*, 1991; Silvestro *et al.*, 1992). Examples from this group would include dentists, accountants and management consultants.

At the other extreme are mass services, which are characterized by low contact time with customers, low levels of customization and a low degree of discretion. In contrast with professional services, this type is equipment- rather than people-focused, with most of the work carried out in the back office. The number of customers processed per day is high and the emphasis is on the product rather than on service delivery (Fitzgerald *et al.*, 1991; Silvestro *et al.*, 1992). Examples of mass services include postal, delivery and ticketing services. Lying between the two extremes are the "service shops", which include car maintenance workshops, retail shops and banks and hotels.

2.5.4 Characteristics of the Service Industry

Besides the intangible nature of their output, services have three other distinctive characteristics compared with physical products and these are heterogeneity, perishability and inseparability (Edgett and Parkinson, 1993; Fitzgerald and Moon, 1996). Table 3 below

illustrates Fitzgerald and Moon's identification of the differences between manufacturing and service companies.

Table 3. Differences between Service and Manufacturing Based Firms

Service and product related characteristics	Service based firms	Manufacturing based firms
Simultaneity	Production and consumption of services are simultaneous, that is, the customer has to be present throughout the process.	Production can occur before the sale of the product and/or service, which means the product can be counted, measured and tested in advance of sales.
Perishability	Services cannot be stored, which means a number of issues arise because of the presence of the customer during the delivery process.	Products can be stored and therefore quality and a match of supply to demand can occur.
Heterogeneity	Due to the labor intensive content (or people aspect) of service delivery the standard of service may vary.	Consistency in production can be managed by automated or specific control systems.
Intangibility	Service outputs are often intangible. Concepts such as helpfulness of staff affect customer satisfaction but are difficult to measure.	Product outputs are tangibles, which mean they are easier to control and assess.

Source: Fitzgerald and Moon (1996)

Intangibility

The effects of this are twofold. Firstly, given the lack of physical attributes of a service, companies in this sector have to seek alternative ways of gauging customer satisfaction. They may try to measure the helpfulness of staff or the degree of change made by the level of service on the customer but such measurement is much less precise than that which can be achieved with physical goods. The second difficulty is that the service provider has little control over the output of their services. Lovelock *et al.* (1999) note that it is the experience of both the provider and the customer that make up the look and feel of the service provided.

Simultaneity

The consumption of the service is not separable from its production (so the overall customer experience is affected by the interaction between the service personnel and the customer Fitzgerald and Moon, 1996; Gambert, 1989). The presence of customers during the delivery of the service will influence the behavior of the staff and will have an effect on the quality of service delivery. It is therefore necessary to monitor the customers' experience, taking into account their expectations and opinions of the service provided.

Heterogeneity

A manufacturer can determine the attributes of the product but in a service transaction, the quality and performance of its delivery is individually determined by the customer. The different characteristics, needs and expectations of each service provider and each

customer will result in a unique performance and experience of the service (Fitzgerald and Moon, 1996; Gambert, 1989). It is important that companies attempt to manage the details of service quality in response to differing customer expectations through the use of such tools as standard operating procedures (SOP).

Perishability

The final characteristic identified by Fitzgerald and Moon (1996) is the inability of service companies to store and keep services as stock. Production and consumption of the service must be in real time and, if there is a mismatch between supply and demand, the service offered will be wasted. It is essential that organizations manage production of services in such a way that it meets the customers' demands.

Although it is not the intention of this research to elaborate further on the characteristics of services, it is clear that these will have a bearing on how SME in the sector utilize performance management systems. It is the focus of this research to examine how the nature of the service sector challenges organizations in this aspect of business management. The next section of the literature review will look at the research that has been carried out in this area.

2.5.5 Performance Management in SME and in Service Industries

The review of the literature on the frameworks for PMS reveals that there has been little development with the service industry despite the growth of the sector in recent years (Amizawati *et al.*, 2010; Sartorius *et al.*, 2006). A number of factors have been put forward to account for this. Brignall and Ballantine (1996) claim lack of exposure to competition within the service sector is a contributing factor to this deficiency. Sartorius *et al.* (2006) identify lower levels of technological development and micro-economic factors. In addition, the characteristics of services are difficult to measure as they are subjective in nature rather than concrete (Pitt and Tucker, 2008).

The Results and Determinants framework was developed within a service context. Thereafter, various systems for measuring performance in service sector industries are mentioned in the literature but what emerges is that these tend to be very industry-specific and designed for very specific purposes. Within the hospitality industry, for example, Southern (1999) developed a systemic framework using a systems-mapping technique in both the design and analysis of performance measurement. Quality and work standards for resources leveling, scheduling and use determination were developed with reference to the operations management framework in order to provide a systematic and structured approach at the operational level.

Two other studies provide examples for developing assessment frameworks for performance management. They look at the variables and factors which service organizations need to consider. The framework developed by Sartorius *et al.* (2006) offers service companies a seven-step system for assessing the appropriateness of the current operation of their PMS. Brignall and Ballantine (1996) looked at how factors such as strategy and business life cycle affect PMS. The authors effectively produced a “checklist” for assessing a PMS although they do note how much leeway remains for the exercise of managerial judgment in the design of the system.

Other researchers have looked at expanding the scope and perspectives of the service organizations' PMS. Zigan *et al.* (2008) analyzed the use of intangible resources in PMS in European hospitals. They found that human capital and relational capital were of particular relevance in the hospital environment. The authors claim that failure to identify the relationship between the tangible and intangible resources will result in suboptimal operational performance. In the performance information portfolio produced by Wisnieki and Stewart (2004) for use in Scottish local authorities, the stakeholder is included in the PMS. The two studies illustrate that the inclusion of other perspectives does assist organizations to improve measurement of performance and thus creates a better reporting process.

Amizawati *et al.* (2010) investigated the effect of the service process type developed by Fitzgerald *et al.* (1991) on the design of an organization's PMS. The findings of their survey indicate that organizational objectives such as strategy have a greater influence on the design of a PMS than the service processes. This would seem to contradict the findings of Auzair and Langfield-Smith (2005) reported in Amizawati *et al.* (2010) that mass services are more suitable for the formal control provided by a PMS than professional services are. However, their findings were inconclusive and further research is needed on how service process type affects the design and use of performance measurement systems in service sector SME.

Just as the literature shows a dearth of research on PMS in the service sector, it also reveals that most work has focused on medium to large-scale companies rather than SME. The Performance Pyramid, the Balanced Scorecard and the Performance Prism were all based on case studies in large, multi-national organizations. Little attention has been given to how these systems might operate in smaller companies (Garengo *et al.*, 2005; Hudson *et al.*, 2001a; Taticchi *et al.*, 2010).

A likely reason for this scarcity of research on SME is the nature of such companies. They are often resource-constrained and therefore reluctant to invest in quality management activities (Hudson *et al.*, 2001b; Nadeem *et al.*, 2010). Another factor that emerges from the literature is that most SME still have PMS that focus on financial or other unstructured,

informal and non-strategic measures (Hudson *et al.*, 2001b). In their study, the authors developed a PMS to meet the structural and cultural constraints of SME. The system aims to measure performance of one strategic objective at a time, allowing a filtering down from strategic to operational level.

Further to this, Cocca and Alberti (2009) developed a self-assessment tool to evaluate PMS which could be used by SME. They incorporated the distinct characteristics of SME into the assessment tool and proposed a list of “best practices” for SME. Scorecards produced from the list reflect three stages of maturity, the idea being that the SME will select the scorecard best describing their existing PMS. Garengo (2009) adopted a similar approach, in which companies can evaluate their PMS using a framework based on the scope and characteristics of their systems.

2.6 Development of the research conceptual framework

Despite common understanding of the rising importance of services to economies, research on service operations management is limited (Chase and Apte, 2007; Parameshawaran *et al.*, 2009). Heineke and Davis (2007:373) state, *“The challenges, therefore still exist to continue the development of the field of service operations, both from a research and a teaching perspective”*.

2.6.1 What characterizes ‘best practice’ in PMS?

From the review of the literature on current practices in performance measurement, certain features suitable for consideration by service sector SME emerge. These characteristics allow the identification of six “best practices” based on the purpose, dimensions, flexibility and accountability of measurement, the bases of the measures selected and the integration of the PMS within the organization. These “best practices” were defined using an induction process (Buckley, 1976 in Garengo, 2009:98).

2.6.1.1 Purpose

Traditional performance measurement was concerned with monitoring in order to penalize those who failed to reach their targets (Kaplan and Norton, 1996; Neely *et al.*, 1997; Lima *et al.*, 2009). By contrast, contemporary systems aim to encourage discussion and promote continuous improvement. Anand *et al.* (2009: 444) define this as, *“a systematic effort to seek out and apply new ways of doing work that is, actively and repeatedly, making process improvements”*. The authors propose a three-element framework focusing on purpose, process and people to ensure a sustainable initiative. Joyce *et al.* (2003) in Gronholdt and Martensen (2009:48) state that for sustained business success, one of the essential

management practices is the creation and maintenance of a performance-oriented culture. Effectively, the integration of the PMS with the other organizational systems permits the conversion of the measurement of performance into the management of performance.

2.6.1.2 Bases

A traditional system is characterized by a top-down flow of communication and a lack of external feedback (Kaplan and Norton, 1992; Micheli *et al.*, 2011; Neely *et al.*, 1997). Malino and Selt (2001) in Speckbacher *et al.* (2003) further point out that the lack of identification of cause and effect relationships between the lagging (financial) and the leading (non-financial) measures may affect the success of the organization's strategy implementation.

Later PMS address these shortcomings, allowing internal feedback and taking external stakeholders' opinions into account too (Hudson *et al.*, 2001bb; Neely *et al.*, 2007; Rey-Marston and Neely, 2010). Durden (2007), for example, developed a framework for a management control system that incorporates social responsibility considerations. Integration of the system with the processes of the organization allows the system to react to change, whether internal or external (Garengo *et al.*, 2007; Nwokah, 2009; Rey-Marston and Neely, 2010). Other researchers have stressed the importance of aligning the PMS with the strategy of the company. Bititci *et al.* (1997) recommend that the PMS is integrated into the various functional units, becoming part of the whole system of the organization.

A business process orientation has also been shown to produce a positive performance outcome. Identifying and measuring the organizational processes and procedures which are considered critical for success is necessary. Skrinjar *et al.* (2008) found that the higher the level of business orientation a firm achieves, the better it performs its non-financial functions.

2.6.1.3 Accountability

In determining the critical success factors of the measures, it is important to involve the parties whose decision and actions ensure this success. This will require the seeking of opinions from both internal and external stakeholders (Basu *et al.*, 2009; Marwa and Zairi, 2009; Roman Schneider and Vieira, 2010). Basu *et al.* (2009) illustrate the use of this approach in the Heathrow T5 project. In their conceptual paper of 2008, Tower and Burnes (2008) state that it is imperative to monitor the performance of the supply chain so that any defect or delay will not affect the whole operation too severely nor affect the overall objectives of the SME.

Parsons (2007:11) recommends the assignment of a PMS project to a team whose members would be drawn from the various functional areas of the organization. Roman Schneider and Vieira (2010) support this idea, and propose a working team to oversee the project comprising a representative from each department with a member of the

management team. Wu *et al.* (2011) advise that the success of the team will depend on the existence of relationship maintenance as opposed to status. The findings from their study also indicated that management interventions to encourage relationships rather than promote the status maintenance of their employees would not be successful. It can be said, therefore, that teamwork does not necessarily guarantee a positive outcome. Sole (2009:4) advises that the different levels of an organization will require different information and consequently different measures. While this suggests a hierarchical structure for the measures, he stresses that, at every level, they should be aligned with the firm's overall strategic goals.

2.6.1.4 Flexibility

To ensure that the ideal of "continuous improvement" can be achieved, the measurement system should be able to incorporate any changes to either the internal or external environment. Inflexibility will deter improvements to the system, as Hinton and Barnes (2009:342) found in their study of performance measurement in e-business. The researchers found that in spite of awareness in the case study organizations of the importance of linking the e-business performance to organizational objectives, the firms were generally unwilling to carry out the necessary overhauls to achieve this. The authors recommended either adaptation of the metrics for e-business or assigning new measures to the existing set used by the individual organization.

As well as incorporating flexibility, an effective PMS should be capable of communicating information in an accessible way. The information should be available to the user in graphical or another visual form (Cocca and Alberti, 2009). Basu *et al.* (2009) described how, through the use of charts, companies in their case studies were able to extract information on the causes of below-targeted indicators. In a case study by Smandek *et al.*, (2010) on public sector IP rights asset management organizations, Balanced Scorecards were developed with a graphical 'BSC cockpit' which displayed the most crucial dynamic indicators.

2.6.1.5 Dimensions

As noted previously, many commentators have pointed out the shortcomings of systems which only take account of financial measures in their evaluation (Barker, 1995; Bourne *et al.*, 2000; Euske and Zander, 2005; Kaplan and Norton, 1992; Neely, 1993). Kaplan and Norton (1992) developed their Balanced Scorecard system, which includes non-financial measures, as a response to these weaknesses. Subsequently though, firms have tended to over-react to the need to incorporate non-financial aspects in their performance measurement systems. Measures have often been included with no real understanding or definition of their purpose or the organization's objectives. Ultimately, only a few measures will have real relevance for the firm (Amaratunga *et al.*, 2001; Euske and Zander, 2005;

Gomes *et al.*, 2011; Jarrar and Schiuma, 2007). Carlucci (2010) states that an effective PMS includes a limited number of Key Performance Indicators (KPIs) which are designed to provide an integrated and complete view of an organization's performance. He suggests the use of an analytical network process (ANP) to prioritize the selected performance indicators in line with pre-determined criteria. In contrast, Tung *et al.* (2011) found that multidimensional performance measures have a significant association with effective PMS. In their study, the two dimensions which indicate PMS effectiveness were performance and staff related outcomes. The value of integrating the PMS with other organization systems and processes in order to allow the identification of cause and effect has been advocated by several researchers including Dahlgaard-Park (2009); Garengo *et al.* (2011); Kaplan and Norton (1996) and Lawrie and Cobbold (2004).

2.6.1.6 Integration

Various commentators have pointed out that the objectives of PMS can only be fully achieved if the information is gathered and analyzed efficiently (Bourne *et al.*, 2002; Garengo *et al.*, 2005; Keung *et al.*, 2000; Neely, 1999; Nudurupati and Bititci, 2005). Traditional PMS were hampered by the lack of technology. Data had to be collected manually, which was time-consuming and often produced outdated information. This led to infrequent reporting (Tangen, 2004). Nevertheless, this was the data upon which managers would base their decisions.

Nowadays, investment in IT support is essential to the success of a firm's PMS. Yeniyurt (2003:134) comments on how today's IT infrastructure enables the aggregation of operational-level metrics with strategic-level metrics. Efficient IT systems also encourage two-way communication between levels of management and provide real-time data (Hudson *et al.*, 2001b). Although the ideal model proposed by De Toni and Tonchia (2001) would be a specialist-designed information system which would enable the collection and integration of data within one system, Meeking *et al.* (2009:19) claim that an improvement software package direct from a shop shelf might be good enough to allow performance insights.

According to De Toni and Tonchia (2001), the performance measurement system should be integrated with the accounting system, the manufacturing, planning and control system and the strategic planning system. The information gathered on each would be shared, allowing decisions to be made on the basis of multiple sources of information. The decision-makers could thus see the consequences of their decisions on every aspect of the organization. Sousa and Aspinwall (2010) point to the need for the PMS to be integrated with other management objectives. For this purpose, Emery (2007:27) suggests a "string network" to tie together all the functions of the organization in order to enable corrective action to be taken by the respective units.

2.6.1.7 Summary of ‘Best Practices’ in PMS

The key features identified for best practice are gathered in Table 4 below. The strength of combination of these features will enable us to determine the level of adoption of the performance measurement system by the SME in this study. The description of best practices begins with purpose of measurement to give a picture of the rationale behind adoption. This is followed by the bases of measurement to help understanding of the criteria the case companies use in developing their PMS. The flexibility and accountability of the system support its functionality and these aspects are examined next. Finally, the dimensions of the measures selected are described, together with the integration of the PMS into the other management systems of the firms (see Figure 11).

Previous researchers in this area have used different features and approaches to classify their case study companies into different types. Examining the type, level and stage of each case study firm enabled them to identify their measurement system requirements. The “Best Practice” guidelines developed for this research will allow the classification of the stage of the performance measurement systems of the case study organizations as either “traditional”, “balanced” or “integrated” (Marchand and Raymond, 2008; Sartorius *et al.*, 2006).

Table 4. PMS Best Practices

1. Dimensions of measurements	
a. Measures/Type of information b. Quantity of measures	Amaratunga <i>et al.</i> (2001); Bamford and Chatziaslan (2009); Barker (1995); Bourne <i>et al.</i> (2000); Brudan (2010); Carlucci (2010); Chia <i>et al.</i> (2009); Cocca and Alberti (2009); De Toni and Tonchia (2001); Euske and Zander (2005); Ittner and Larcker (1998); Johnson and Kaplan (1987); Jusoh <i>et al.</i> (2007); Kaplan and Norton (1992); Kaplan and Norton (1996); Lawrie and Cobbold (2004); Neely (1993); Speckbacher <i>et al.</i> (2003); Tung <i>et al.</i> , (2011)
2. Bases of measures selection	
a. Service type sector: Contact time with customers. Customers served per day. Level of service/product customization. Level of discretion given to employees. Level of interaction with customers. Level of process orientation. Level of front-office orientation. Process of service experience. End result of service experience. b. Strategy: Derived from strategy. Its linkage of operations to strategic goals. Its ability to trigger changes to the strategy. c. Others: Cost effective to collect. Time efficient to collect. Its ability to provide fast, accurate feedback. Employees' recommendations.	Cocca & Alberti (2009); Dahlgaard-Park (2009); De Toni and Tonchia (2001); Durden (2007); Euske and Zander (2005); Fitzgerald <i>et al.</i> (1991); Ghalayini <i>et al.</i> (1997); Kaplan and Norton (2001); Karassavidou (2009); Lynch and Cross (1991); Marr and Neely (2010); Nwokah (2009); Pongatichat and Johnston (2008); Sartorius <i>et al.</i> (2006); Skrinjar <i>et al.</i> (2008); Sousa and Aspinwall (2010); Speckbacher <i>et al.</i> (2003); Urban (2009); Waweru and Spraakman (2009)
3. Purpose of measurement	
a. Achievement of goals and objectives: Improve current strategy. Identify defects in strategy.	Anand <i>et al.</i> (2009); Cocca and Alberti (2009); De Toni and Tonchia (2001); De Waal (2007); Hudson <i>et al.</i> (2001b); Kaplan and Norton (1996); Karassavidou <i>et al.</i>

<p>Meet requirements of external stakeholders.</p> <p>b. Evaluate, control and improve procedures and processes. Make corrective actions. Control cost. Monitor past performance. Improve the quality of services. Improve customer satisfaction. Plan future performance. Allow continuous improvement.</p> <p>c. Compare and assess performance of teams, individuals and the organization. Monitor employees' performance. Determine awards and bonuses. Ensure employees perform their tasks accordingly.</p>	<p>(2009); Lima <i>et al.</i> (2009); Neely, <i>et al.</i> (1997); Pongatchat and Johnston (2008); Sole (2009); Speckbacher <i>et al.</i> (2003:367); Teague and Eilon in Pitt and Tucker (2008).</p>
4. Accountability of measures	
<p>a. Lowest level of performance measures is aligned with the strategic goal of the organization.</p> <p>b. All staff focuses their attention and efforts on the organization's strategic objectives.</p> <p>c. Causal relationship of each measure is clearly shown.</p> <p>d. An appointed person/team is assigned to monitor the high level measures.</p> <p>e. Mid-level managers are assigned to be responsible for their own unit's individual performance measures.</p> <p>f. Procedures for performance measurement process are in place and clearly defined.</p> <p>g. Managers' opinions from different managerial levels are taken into account in developing the performance indicator</p> <p>h. Opinion of customers taken into account in developing the performance indicators.</p> <p>i. Opinion of employees taken into account in developing the performance indicators.</p> <p>j. Opinion of suppliers taken into account in developing the performance indicators.</p> <p>k. Opinion of other external stakeholders (such as the government and the public) taken into account in developing the performance indicators.</p>	<p>Basu <i>et al.</i> (2009); Bititci <i>et al.</i> (1997); Bowman and Asch, (1996); Cocca and Alberti (2009); Drucker (1990); Euske and Zander, (2005); Garengo <i>et al.</i> (2007); Ghalayini <i>et al.</i> (1997); Hudson <i>et al.</i> (2001b); Kaplan and Norton (1992); Kaplan and Norton, (1996); Khaden (2008); Lynch and Cross (1991); Marwa and Zairi (2009); Neely <i>et al.</i> (1997); Parson (2007); Roman Schneider and Vieira (2010); Sole (2009); Speckbacher <i>et al.</i> (2003)</p>
5. Flexibility of measures	
<p>a. Flexible, rapidly changeable and maintainable.</p> <p>b. Ability to track changes in the environment.</p> <p>c. Easy to implement, use and run.</p> <p>d. Easy to communicate.</p> <p>e. Graphically and visually effective.</p>	<p>Basu <i>et al.</i> (2009); Cocca and Alberti (2009); Smandek <i>et al.</i> (2010).</p>
6. Integration of PMS	
<p>a. Management systems and processes are integrated.</p> <p>b. There is a dynamic relationship among different departments, units, teams etc in the company.</p> <p>c. Improvement initiatives are adopted for the benefit of the whole organization.</p> <p>d. Different functional systems are integrated into the performance measurement system.</p> <p>e. Different performance reports can be easily communicated and accessed simultaneously.</p> <p>f. Performance measures are linked to rewards system.</p> <p>g. Integration of performance measurement system is supported by technological capability.</p>	<p>Bititci (2002); Bourne (2001); Bourne <i>et al.</i> (2002); Bourne <i>et al.</i> (2005); Cocca & Alberti (2009); De Toni and Tonchia (2001); Emery (2007); Garengo <i>et al.</i> (2005); Garengo <i>et al.</i> (2007); Hudson <i>et al.</i> (2001b); Johanson <i>et al.</i> (2006); Keung <i>et al.</i> (2000); Marr and Neely (2001); Meeking <i>et al.</i> (2009); Neely (1999); Nudurupati and Bititci, (2005); Sousa and Aspinwall (2010); Tangen (2004).</p>

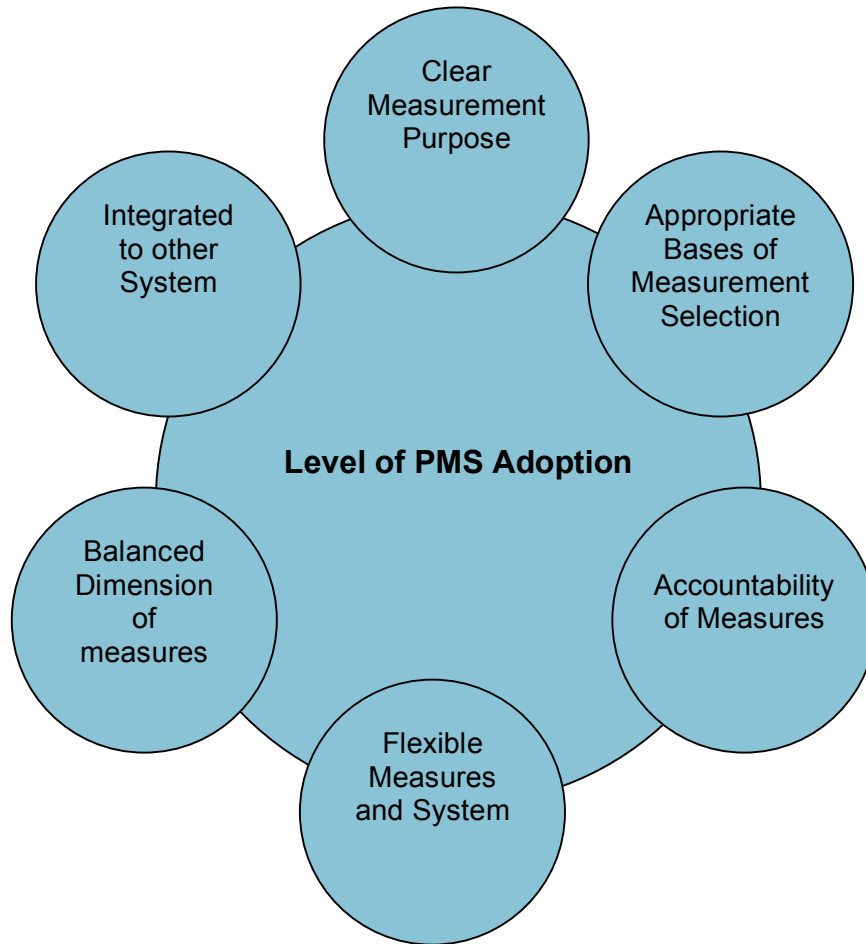


Figure 11. Key Feature of Performance Measurement System Best Practices

2.6.2 What organization contextual factors drive the adoption of PMS?

The literature reviewed thus far has not attempted to outline the forces that drive an organization towards adoption of a PMS nor those which determine the stage of such adoption. This section attempts to explore the literature on these issues and to produce a list of generic factors that influence this adoption of performance measurement systems in particular those that are empirically collected from the literature on SME performance measurement systems.

Investigations reveal a variety of factors which contribute to the success or failure of performance measurement system initiatives. Some studies emphasize the human organizational factors while others prefer the idea that structural factors have a greater influence (De Waal and Counet, 2009). Many studies based on case research have attempted to investigate the problems faced by SME in their efforts to develop their own performance measurement systems (Bititci *et al.*, 2004; Bourne *et al.*, 2000; Bourne *et al.*, 2002; Garengo *et al.*, 2007; Garengo & Bititci, 2007; Turner *et al.*, 2005).

Bourne *et al.* (2000; 2002) investigated the factors that influence the development of PMS at different levels of the cycle. The authors performed a longitudinal study on three SME that successfully proceeded from the design to implementation and use stage. The outcome of the study on these three companies identified three common obstacles to performance measurement system development;

1. *'resistance to measurement, occurring during design and use phase;*
2. *computer systems issues, occurring during implementation of the measures;*
3. *top management being distracted from their commitment during the design and implementation phases'.*

Their initial findings identified common issues that were supported by their later study, which was conducted with a larger sample size. These were a negative organizational culture, lack of management commitment and failure of IT to support the implementation and use of the PMS. However, their studies failed to investigate the relationship between the factors identified and the system itself. In other studies, including those of Bititci *et al.* (2004) and Garengo and Bititci (2007), the researchers have managed to investigate and illustrate how these relationships operate.

Bititci *et al.* (2004) in their longitudinal action research in industrial organizations indicated that organizational culture and management style have a certain impact on the implementation and use of performance measurement systems. At the same time, the performance measurement system itself has an influence on management style and

organizational culture. In-depth investigation indicated that while an authoritative management style is needed for successful implementation, it is not a necessity in sustaining the use of the system if the organization adopts an achievement culture.

The study conducted by Garengo *et al.* (2007) illustrated the relationship between performance measurement systems, management information systems (MIS) and organizational capabilities. The findings indicated that mature SME are likely to have an effective MIS to drive the implementation of performance measurement systems but younger organizations need an external stimulus such as free outside support or expertise for the implementation to be successful. However, this study investigated only one of the many contingency factors that might influence such initiatives.

Other issues that have been identified are the structure of corporate governance and training and external assistance (Garengo and Bititci, 2007; Sousa *et al.*, 2006; Turner *et al.*, 2005). The empirical findings of the latter study revealed that traditional family firms are unlikely to adopt a structured PMS, and that a change of business models helps to initiate the need to implement a system to drive improvement. Furthermore, an emphasis on the key role of management information systems and employee behavior leads to an inclination towards adoption. Meeking *et al.* (2009) found that management style also influences the success of any system.

Turner *et al.* (2005) showed that, in order to have successful implementation, there needs to be a systematic, well-resourced project development plan and an external advisor to assist with the project. This indicates that some of the problems preventing successful implementation reside in the inherent characteristics of the SME that were mentioned previously, most notably their lack of resources. There is little prescriptive guidance in the literature on selecting and implementing the system that is most relevant for the individual SME.

Further to this, Sousa *et al.* (2006) found that the main obstacles to adopting new performance measures were difficulties in defining the measures themselves and the necessary re-training of employees. Lack of training and understanding of the processes were said to be contributing factors to the resistance to the implementation of such systems in SME. This was further influenced by the lack of measures on innovation and learning among the SME surveyed. Again, this study is quite general as no analysis was conducted on the relationship between the problems and the types and sizes of the companies.

De Waal and Counet (2009) produced a survey which was distributed to experts in the area of performance measurement, including practitioners and academicians. The researchers provided a list of structural and behavioral problems faced by organizations in their efforts to

implement performance measurement systems. When the list was presented to the practitioners, they perceived that almost all of the top ten impeding factors were related to issues of organizational behavior, such as lack of a performance management culture, lack of management commitment, inappropriate management style, employee resistance and low perceived benefits from the system.

However, from the academicians' point of view, only half of the top ten factors were related to organizational behavior. The other five were identified as issues relating to organizational structure, such as lack of ICT support, the instability of the organization or the system itself being too complex. Elzinga *et al.* (2009) found that the ten most important factors exist in all three stages of the PMS development process – design, implementation and use.

A more recent study by Pedersen and Sudzina (2012) identified a mixed result of the effects of the internal capabilities of the organization, including the skills and knowledge base, technical and managerial systems and the firm's norms and values, and those of the external environment with its uncertainties in respect of politics, competition, and the labor market. Their study indicates that certain measures have a significant relationship with some of the internal and/or external factors. Nevertheless, this finding was based on a wide range of company sizes in Denmark. Thus, the mixed result might be due to the mix of company size. Furthermore, the internal capabilities they investigated were based on the mechanistic and organic forms of management control of Burns and Stalker's model (1994) rather than the more holistic organizational factors previously investigated in the literature. The use of the Burns and Stalker model might not be adequate to produce a truly valid result.

A summary of the forces is compiled in Table 5, together with the respective references.

Table 5. Driver and Barrier Forces of Performance Measurement Systems

Authors	Industry Sector	Forces
(Bourne, Mills, Wilcox, Neely, & Platts, 2000)	Manufacturing	i. Resistance to measurement, occurring during design and use phase; ii. Computer systems issues, occurring during implementation of the measures; iii Top management commitment being distracted, occurring between the design and implementation phases.
(Hudson, Lean, & Smart, 2001)	Manufacturing	i. Philosophical foundations of SME
(Bourne, <i>et al.</i> , 2002)	Manufacturing	i. Clear purpose of the performance measurement system project ii. Structure of the organization (parent company's intervention) iii. Paternalistic culture within the organization
(Bourne, <i>et al.</i> , 2002) Tung <i>et al.</i> (2011)	Manufacturing	i. Top management commitment ii. Perceived benefits of performance measurement systems iii. Time and effort required for the project iv. Negative perception of the consequences of the PMS v. The ease of data accessibility through the existing IT systems vi. Being overtaken by new parent company initiatives
(Bititci, <i>et al.</i> , 2004)	Four manufacturing and one service company	i. Organizational culture ii. Management styles

(Garengo, Biazzo, & Bititci, 2005)	General overview of SME by various authors	i. Lack of human resources ii. Managerial capacity iii. Limited capital resources iv. Reactive approach v. Tacit knowledge and little attention given to the formalization of process vi. Misconception of performance measurement
(Turner, Bititci, & Nudurupati, 2005)	Manufacturing	i. Knowledge transfer from external expertise ii. Lack of guidance within contemporary PMS
(Sousa, Aspinwall, & Rodrigues, 2006)	General (Survey)	i. Lack of training and understanding of the process
(Garengo, Nudurupati, & Bititci, 2007)	Manufacturing	i. Implementation of MIS affecting the success of a PMS ii. Maturity of the organization iii. External expertise for non-mature organizations
(Garengo & Bititci, 2007)	Four manufacturing and one service company	i. Corporate governance structure ii. Advanced information practice and advanced behaviors on the part of people involved iii. Change in a firm's business model iv. Authoritative management style
(Brem, Kreusel, & Neusser, 2008)	One manufacturing company	i. Strategy formulation based on corporate size ii. Creation of an applicable and formal processing landscape iii. Implementation of a suitable Enterprise Resource Plan iv. Implementation of Activity Based Costing
(De Waal & Counet, 2009)	General (survey of experts)	i. Organization structural factors - Lack of ICT support - Instability of the organization - The system is too complex ii. Organization behavioral factors - Lack of performance management culture - Lack of management commitment - Wrong management style - Resistance and low benefits perceived by members of organization on PMS

The literature on driver and barrier forces in the adoption of performance measurement systems is extensive and has been explored thoroughly in this paper in relation to SME. On the basis of this review, the forces that have the same attributes are categorized together in order to generate key themes of influencing forces. The result is six categories which are shown in Table 6 below.

Table 6. Categories of Driver and Barrier Forces

Categories	Driver and Barrier Forces	References
Corporate Governance	Instability of the organization Structure of the organization (parent company's intervention) Maturity of the organization Corporate governance structure Change in a firm's business model	Garengo & Bititci (2007); Gubitta & Gianecchini (2002); Micheli <i>et al.</i> , (2011); Ong & Teh (2008)
Organizational Culture	Reactive approach Lack of performance management culture Resistance to measurement, occurring during design and use phase Negative perception of the consequences of performance measurement system by the personnel Misconception of performance measures Resistance from members of an organization and low benefits from the performance measurement system perceived Paternalistic culture within the organization Perceived benefits of a performance measurement system Advanced behaviors on the part of people involved	Bititci <i>et al.</i> (2004); Bourne, <i>et al.</i> (2000); Bourne (2001); Bourne <i>et al.</i> (2002); De Waal (2002); De Waal & Counet (2009); Garengo <i>et al.</i> (2005); Kaplan & Norton (1996); Marr & Neely (2001); (A. Neely & Powell, 2004); Richardson (2004);

Information Technology	The ease of data accessibility through the IT system Computer system issues during the implementation stage Lack of ICT support Advanced information practice Implementation of MIS Implementation of a suitable Enterprise Resource Plan Implementation of Activity Based Costing	Bourne <i>et al.</i> (2000); Bourne (2001); Bourne <i>et al.</i> , (2002); Bourne, <i>et al.</i> (2005); De Waal & Counet, (2009)Garengo <i>et al.</i> (2005); Garengo & Bititci (2007); Kueng <i>et al.</i> (2000); Marr & Neely (2001); Mendibil & MacBryde (2006); Neely <i>et al.</i> (1997); Neely (1999); Nudurupati & Bititci (2005);
Human Capital	Time and effort Lack of human resources Limited capital resources Lack of training and understanding of the process Tacit knowledge and little attention given to the formalization of the process Knowledge transfer from external expertise External expertise for non-mature organizations	Bierbusse & Siesfeld, (1997); Bourne, (2001); Bourne <i>et al.</i> (2005); Chan (2004); Kaplan & Norton (1996); Marr & Neely (2001); McCunn (1998); Nair (2004); Richardson (2004); Sousa <i>et al.</i> (2006); Turner <i>et al.</i> (2005)
Management Style	Management capacity Top management commitment being distracted Lack of management commitment Wrong management style Authoritative management style	Bourne <i>et al.</i> (2000); Bourne (2001); Bourne (2002); Bourne <i>et al.</i> (2005); De Waal (2002); Franco-Santos & Nair (2004); Garengo & Bititci (2007); Hwang & Thom (1999); Neely <i>et al.</i> (1997); Neely & Adams (2001); Tung <i>et al.</i> , (2011)
Organization Strategy	Being overtaken by new parent company initiatives Lack of guidance within contemporary performance management systems Strategy formulation based on corporate size Creation of applicable and formal processing landscape Implementation of a suitable Enterprise Resource Plan Implementation of Activity Based Costing Clear purpose of the performance measurement system project The system is too complex Customer and structure analysis Stakeholders analysis Strategy formulation based on the corporate size	Bourne (2001); Globerson (1985); Kaplan & Norton (1996); Letza (1996); Kaplan & Norton (2001); Leitinen(2005); Maskell (1989); Mendibil & MacBryde (2006) ; Meyer (2002); Nair (2004); Neely <i>et al.</i> (1994); Neely & Adams (2001)

In the following section, the relationship between the six organization contextual factors and the 'best practices' performance measurement system is investigated, with each aspect of the contextual factors examined in detail.

2.6.2.1 Organization Strategy and PMS

a. Introduction

This section examines the literature on how different structures and typologies of organization strategy assist organizations to achieve their goals. It also illustrates the importance of defining and communicating organization strategy in making the design and use of a performance measurement system effective.

b. Definition of Strategy

Chandler (1964) explained the importance for organizations of setting clearly defined goals (the ends) and then of providing the appropriate support systems, including infrastructure and resources (the means), to achieve the goals. Strategic decisions are required to direct the energies of the organization to the right place and in the right amount to ensure the objectives are met.

At the business level, the key issue is to determine the competitive strategy. This is achieved by focusing on market segment and how to achieve specified marketing aims. Porter (1980) describes three generic categories of competitive business strategies, which are market segmentation strategy, differentiation strategy and cost leadership strategy.

Market segmentation strategy concentrates on only a few market segments. It is a target-oriented strategy and other firms may be unwilling to enter the market due to lack of knowledge of the market niche. Thus, product or service innovation is important for firms who practice this form of strategy in order to maintain their market segment.

The focus of differentiation strategy is to produce a unique product or service that is difficult for competitors to copy. It capitalizes on brand-loyalty. The main advantage of this strategy is the ability of the firm to maintain a barrier to entry by new firms into their market.

Cost leadership strategy is aimed at the firm producing their goods or services at a lower cost than their competitors. Therefore, maintaining low costs is the priority of this strategy. This can be achieved by taking advantage of economies of scale. However, in order to benefit from economies of scale, a firm's production should be high and standardized to ensure customers will continually purchase their goods or services.

Wisniewski and Stewart (2004) suggested that stakeholder requirements should also be identified in the formation of an organizations' business strategy. They identify stakeholders as customers, employees, suppliers, competitors and regulators and suggest that strategy focuses on fulfilling their requirements. Which group will take precedence depends on the overall goals of the organization. The choice of strategy will affect the organization's choice of processes, systems and procedures which, among other factors, support a successful outcome.

c. The Role of Strategy in SME

The benefits of strategic planning were described by Beaver (2002) as:

1. *It encourages owner-managers to assess and articulate their vision.*
2. *A strategy provides the starting point for the setting of objectives.*
3. *It acts as a guide to decision-making process.*
4. *A strategy guides the organization and design of the firm and relates it to the operating environment.*
5. *A strategy illuminates new possibilities for business development.*

However, the selection of a strategy and the implementation will depend on the context in which the organization operates; its size, environment, structure, resources and its level of maturity (Chandler, 1964; Donaldson, 1996, 2001). The strategy process is also influenced

by factors like power and politics, external control and managerial characteristics (see Brouthers, Andriessen, & Nicolaes, 1998). For small and medium-sized companies, strategic choices are influenced by their inherent shortfalls in relation to finance, human resources and infrastructure (Hudson *et al.*, 2001bb). The cost leadership strategy identified by Porter (1980) may not be suitable for an SME because it lacks the advantage of economies of scale.

d. The Role of Strategy on Performance Measurement Systems

Several authors have described how strategy affects the design, implementation and use of a PMS (Globerson, 1985; Maskell in Neely *et al.*, 2000). It is also the case that employment of a PMS can facilitate the strategic allocation of resources, so enabling consistency in decision-making and resource allocation (Letza, 1996; Leitinen, 2005).

Ideally, a PMS will be congruent with the organization's strategy but the literature shows that a key issue with any PMS is the problem of aligning it with this strategy across the organization. If the goals and objectives of different levels within the organization are not aligned, the developed performance indicators could influence them in different directions (Hanson *et al.*, 2011; Johnston and Pongatichat, 2008). Hanson *et al.* (2011) observed that, in a strategic change exercise, certain members of the lower level management tended to maintain the previous business processes. This tendency has the potential to affect the alignment of strategy at operational and corporate levels. It is therefore essential that the organization clearly defines its global goals and communicates these effectively throughout the organization prior to the development of the PMS.

The relevance of the performance measures and the justification for their use needs to be understood by all parties to minimize the possibility of resistance. Kaplan and Norton (1996) suggest a strategic map be developed to align the organization's strategy.

Other authors in addition to Kaplan and Norton have described how unclear strategy results in poorly defined 'Critical Success Factors' (CSF) and 'Key Performance Indicators' (KPI), which then affect the credibility of the system, possibly rendering it unreliable or even irrelevant. A good example can be found in Johnston and Pongatichat's 2008 case study on a local Thai police force. This showed how the misalignment of the PMS with the organization's strategy created tension. To overcome this, coping strategies at the operational level had to be developed, consequently create misalignment of strategy (Hanson *et al.*, 2011).

2.6.2.2 Corporate Governance Structure and PMS

a. Introduction

This section examines the literature on corporate governance structures and the role it plays in an organization's strategic decision-making process. It also illustrates the importance of defining the role, task, power and composition of the board of directors and the top management team in an organization and how the involvement of the owner in strategic decision-making can potentially have negative effects.

b. Definition of Corporate Governance Structure

The OECD (1999) looked at corporate governance in terms of the procedural organization within a company. In the definition it offered, there is a focus on who has responsibility for what in the organization and on what rights individual members have. Overall, the definition is concerned with rules. In contrast, Shleifer and Vishny (1997) viewed this topic from the perspective of those financing the organization. Corporate governance, they stated, is the methods used by the financiers to ensure that managers employ the resources profitably.

There is agreement in both definitions that corporate governance involves the systems, procedures and rules that govern managers in their daily activities, making them accountable and transparent in their decision-making. This will be more important when there is a separation between the role of the owner and the manager. If the role of the owner is that of an investor who does not have any direct involvement in the daily management of the business, then systematic and structured corporate governance is vital to safeguard the interests of both parties.

The choice of the best model for an organization's corporate governance structure is affected by a number of variables such as corporate ownership, the composition of the board of directors and the top management team (Brunninge, Nordqvist, & Wiklund, 2007). The authors tested the relationship between these variables in the context of SME, with a dependent variable of strategic change. Their findings suggested that bringing in outside board members and putting in place a top management team provided a positive correlation with an organization's strategic change. They also indicated that most family-run SME would be open to the idea of broadening the composition of the top management team but they would want the board of directors to retain the authority to make strategic changes to their organization. Brouthers *et al.* (1998) asserted that if the position of a 'strategy manager' was held by the founder of the company, their strategic decisions might be less rational, reflecting the owner's personal interests and needs.

c. Corporate Governance Structure and its Effect on Performance Measurement Systems

A study conducted by Garengo & Bititci (2007) analyzed corporate governance from two dimensions; the role of the board and the influence of ownership. They investigated the relationship between corporate governance structures and implementation and use of performance measurement systems in four SME in Scotland. The study found that the implementation and use of PMS is more effective when there is separation between ownership and management. Companies with non-owner managers have a more advanced performance measurement system than those companies managed by the entrepreneurs themselves. This finding confirms one objective of performance measurement, which is to increase the transparency and accountability of managers. This is usually a requirement enforced by the owners or shareholders on the appointed managers so there is a formal monitoring system which collects information upon which to base decision-making. In contrast, in owner-managed SME, the owners or family members tend to use performance indicators based simply on their own knowledge and experience. As such there tends not to be a formal and structured method of information gathering in these companies. Indeed, Garengo and Bititci (2007) found that entrepreneurs displayed a reluctance to share information with the members of their organizations.

Gubitta & Gianecchini (2002) investigated the impact of non-family management on the structure of corporate governance in SME in Italy. Their study indicated that the corporate governance model of family-run SME had to change when non-family members were introduced into the management team. According to the authors, the SME, *'need to identify adequate tools for the involvement of non-family executives in their management.....the participation of individuals possessing critical competencies, regardless of their belonging to the owning family, in strategic decision-making processes'* (Gubitta & Gianecchini, 2002:282). Their study provided a new theoretical framework of corporate governance for these SME.

Ong & Teh (2008) looked specifically at ownership types in relation to implementation of PMS in their study of electronics firms in Malaysia. Their findings indicated foreign-owned companies are more likely to use a balanced contemporary performance measurement system than locally owned companies. They attributed this to the greater ability of the former to import and implement knowledge of more advanced systems.

In summary, the literature indicates that an organization's corporate governance structure will affect the direction management takes in relation to formalizing the measurement of performance.

2.6.2.3 Organization Culture and PMS

a. Introduction

The typology of organization culture and the role it plays in assisting managers to run their business is analyzed in this section. The literature shows the importance to an organization of understanding its own culture in order to effectively make any internal changes. It illustrates that different organization cultures require different approaches in handling any management task and how important effective communication is in this process.

b. Definition of Organization Culture

Schein (2005), defined organization culture as, '*A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems*'. It is a system of beliefs, norms and ethics that are common within, or distinct to, an organization. The system forms the way people within an organization behave and interact with each other and with their stakeholders. The values of an organization are reinforced by managers or the owners through the implementation of strategies, goals and philosophies to be followed by the members of the organization. These will also determine the way an organization is structured, including the processes and the procedures need to be followed to achieve organizational goals.

As an organization matures, its culture will stabilize. The stabilization of culture creates the unconscious belief in the members of the organization that their current values, business structure and processes are those best suited to them. Nevertheless, an organization cannot afford to be infatuated with its current culture if the internal and external environments do not permit this. New entry competition and inefficient and ineffective business models are two examples of factors prompting the need for change in culture.

To achieve such change, it is necessary to study the existing organization culture. Various typologies of culture can be found in the literature. A brief description of those outlined by Harrison (1987) is given below:

Role Culture: This type of culture emphasizes the contractual obligation of the members of an organization. Individuals perform their tasks because of the trust given to them through the stated responsibilities in their contracts.

Achievement Culture: This type of culture emphasizes the satisfaction achieved by the members in performing their tasks. Their motivation is to carry out their tasks to the highest level in order to derive personal satisfaction.

Power Culture: This type of culture emphasizes the existence of different levels of authority within an organization. Members of an organization tend to perform their tasks due to fear of punishment and hope for rewards.

Support Culture: This type of culture emphasizes the existence of involvement of members of an organization in the decision-making process. Employees perform their tasks to achieve a sense of satisfaction and create the same for others. The views and opinions of the members of the organization are taken into consideration in the decision-making process.

A study conducted by Gronholdt and Martensen (2009) identified that a performance-oriented corporate culture has a positive relation with high-performing companies. It also enables an organization to attract, keep and develop new talents in the companies.

c. Role of Organizational Culture on Performance Measurement Systems

Organization culture may be one of the contributing factors to the effectiveness of the design and use of a performance measurement system, depending on the organization's attitudes towards and beliefs about the new system and the status of their current culture.

In order for an organization to introduce and enforce new systems such as performance measurement, it is necessary to have a supportive organization culture. Organizations with a positive attitude towards innovation and continuous learning will have a better chance of successfully implementing a new system compared with organizations in which continuous learning is not nurtured (Dahlgard-Park, 2009; Pedersen and Sudzina, 2012).

For SME, their organizational culture is usually molded by the entrepreneur or owner, whose beliefs, norms and values become part of the daily routine for the employees. Investigating the characteristics of the culture that exists within an organization enables managers or owners to understand the best methods for implementing any changes that need to be made. The most common reason for failure in any change initiative is a lack of understanding of organization culture by the managers.

Several researchers have concluded that the best chance for successful implementation of a performance measurement system lies in organizations with a culture that encourages learning and development and promotes teamwork and the sharing of information (Bititci *et al.*, 2004; Bourne *et al.*, 2002; Garengo *et al.*, 2005). In a study of public organizations, Sole (2009:8) found that the main factors which characterize a performance-oriented culture are:

1. *a focus on the end result for users and citizens;*
2. *employees' empowerment in taking responsibility without fear of blame; and*

3. *a positive approach to performance management, by considering it as a tool for improvement and not merely a form-filling exercise.*

Neely and Powell (2004) found that a defensive culture might encourage managers to choose measures that are in their favor, so using performance measurement as a 'political gaining process' instead of a genuine management tool. The negative attitudes of the members of an organization and misconceptions about performance measurement could explain the organization's current culture and account for a lack of innovation or continuous improvement (Bourne, *et al.*, 2000; De Waal, 2002; De Waal & Counet, 2009; Garengo *et al.*, 2005; Parsons, 2007).

However, Kaplan and Norton (1996), Richardson (2004) and Hanson *et al.* (2011) explained that resistance and negative perceptions towards a performance measurement system might arise from a lack of clear information on the purpose and goals of the new system, rather than from the existing management control system. Such a system as the employees' performance appraisal can produce a negative effect towards the acceptance of PMS (Pedersen and Sudzina, 2012). Furthermore, as Procter *et al.* (2007) have noted, the existence of a performance related pay scheme does not necessarily encourage buy-in of the appraisal system. Lack of clarity within the appraisal system itself and lack of confidence in it on the part of the employees will hinder development of the work culture necessary to support the system. Change needs to be managed properly to encourage a positive attitude from the members of the organization, with senior managers communicating the reasons for changes and the benefits a new performance measurement system can bring to the overall performance of the organization (Bourne, 2001; Marr & Neely, 2001; Franco-Santos & Bourne, 2002; Hanson *et al.*, 2011).

2.6.2.4 Management Style and PMS

a. Introduction

The literature offers different typologies of management style and indicates the importance of selecting the appropriate one to fit the organization's culture and needs. The correct style will mobilize subordinates to achieve organizational objectives. The aim of this section is to investigate how different management styles affect the design and use of performance measurement systems.

b. Definition of Management Style

Management style was defined by Tull and Albaum (1971) in Poon *et al.* (2006) as '*a recurring set of characteristics that are associated with the decisional process of the firm or*

individual managers'. It can also be defined as the attitude and behavior of a manager towards their subordinates in the effort to achieve organizational objectives.

The function of any management style is to direct and motivate employees and an effective management style will take into account the culture of an organization. Choosing and adopting any particular management style will have an effect on the profitability of organization. If there is conflict between the culture of an organization and the style of management, resistance from employees will develop, resulting in poor overall organizational performance. It is therefore imperative for managers to understand their organization culture before choosing the style of management. At the same time, it is also important for managers to be able to change their management style in response to changes in the internal or external environment (Tannenbaum & Schmidt, 1973).

In this study, four types of management style, which focus on the method and degree of supervision and the manager's relationship with subordinates, will be discussed. In addition, the four types selected have been tested empirically in the performance measurement literature (Bititci *et al.*, 2004). The four styles are explained briefly below:

Laissez-faire Style: Managers limit their duties of supervision and management in the belief that employees are independent and capable of assuming their own duties. This style is suitable in a professional and creative organization. The disadvantage of this management style is a lack of coordination among the units, which may result in employee de-motivation as a lack of teamwork and an unclear sense of direction are felt.

Authoritative Style: Managers assume that people do not naturally like to work and therefore coercion is needed. Management believes that the only way to motivate the members of the organization is by enforcing strict management policies and guidelines for them to follow. In addition, employees are not given the opportunity to express their opinions.

Consultative Style: Managers encourage the members of an organization to contribute and be partly involved in the decision-making process. However, major decisions are still made by higher-level managers.

Participative Style: Managers have great confidence and trust in their employees. As a result, communication flows easily and effectively between the subordinates and the management. The employees are fully involved in the final decision.

c. Management Style in Relation to Performance Measurement Systems

The research of Bourne *et al.* (2005) indicated that one reason for successful implementation of a performance measurement system is the existence of the right

management style and practices in an organization. Garengo & Bititci's (2007) investigation of six case studies indicated that in only two of the cases was a system successfully implemented and used. The main driver of this success was the application of an authoritative management style by the managers during the initial implementation stage with a change to a more consultative and democratic style needed later to sustain the system.

Nevertheless, the success or failure of a performance measurement system might rest not only on the management style but also on the attitudes of the managers themselves. Hwang and Thorn (1999), Nair (2004), Bourne *et al.* (2005) and Tung *et al.* (2011) all found that management tends to lose sight of the purpose of a performance measurement system. This might be due to the short-term attitudes of managers wanting only to implement initiatives that will give them immediate results (Bourne, 2001; Bourne, *et al.*, 2000; Neely *et al.*, 1997).

A number of researchers found the lack of commitment displayed by members of an organization could be due to their perception of a performance measurement system as a management control system, aimed at punishing non-performers (Bourne, 2001; De Waal, 2002; Franco-Santos & Bourne, 2002; Neely & Adams, 2001). A management change initiative, such as the introduction of a performance measurement system, should not be perceived only as a control system but rather it should be introduced as a participative and ethically guided change (Burnes and Cooke, 2012).

2.6.2.5 Information Technology and PMS

a. Introduction

This section summarizes the findings of the literature on the role of technology in influencing the performance of an organization. The importance of IT in supporting the long-term competitiveness of an organization and in the design and employment of a performance measurement system will also be illustrated.

b. Definition of Information Technology

Morone (1989) asserted that technology has changed the way businesses compete and the way managers make decisions. To achieve a competitive edge, organizations must acquire and implement technology as it allows managers to make well-informed and up-to-date decisions in an ever-changing business environment.

Robbins (1996) describes technology as a method of transforming input (either raw materials or data) into output (either finished goods and services). It uses machines and programs to collect and analyze data, producing information upon which decisions can be

made. Different types and sizes of companies require different degrees of technology to support their business and managerial activities to ensure their investment in information technology is both efficient and effective.

c. The Role of Technology on Performance Measurement Systems

The literature identifies technology as a key factor in performance measurement. According to Garengo *et al.* (2005), the degree of investment in and use of technology determines the design and use of the performance measurement system.

Research findings by Mendibil & MacBryde (2006) also indicate that technology is one of the factors that enables the development of a performance measurement system from the initial design stage to full implementation throughout the organization. Without a robust information technology infrastructure to support data collection and analysis, the members of the organization would need to do this manually. This would be both time-consuming and demotivating and might ultimately lead to the abandonment of the system (Bourne, 2001; Bourne, *et al.*, 2005; Franco-Santos & Bourne, 2002; Marr & Neely, 2001).

Garengo and Bititci (2007) found a positive relationship between the management information system (MIS) and the implementation and use of a performance measurement system. Their case studies illustrated the importance of the MIS in facilitating the collection, analysis and dissemination of performance measures. However, their case studies also indicated that a mismatch between the hard (technology) and the soft (managerial practices and human behavior towards IT) elements affected the effectiveness of any information system.

Adequate investment in information technology infrastructures is essential for the success of a performance measurement system. Investment alone though is not sufficient to guarantee success as the human element, including negative attitudes to technology, can hamper the operation of the system.

How members of an organization respond to information produced by the system will depend on the organization's culture. The information could be perceived as a method for management to evaluate and subsequently punish those members who do not achieve the pre-defined set of performance standards. On the other hand, it could be seen as a tool to promote learning. As noted previously, organizations that practice learning and continuous improvement will have a more positive attitude to performance measurement (Nair, 2004; Garengo & Bititci, 2007; Gomes *et al.*, 2011). Gomes *et al.* (2010) looked at performance measurement practices in manufacturing companies in Portugal. They revisited the companies five years after their initial investigation and found no remarkable change. Their

respondents agreed on the importance of having balanced measures but the actual utilization remained low.

2.6.2.6 Human Capital and PMS

a. Introduction

This section looks at the literature on human capital and its role in influencing the overall performance of an organization. Four types of human capital are examined. These are the manager's education, the manager's experience, management training and external assistance.

b. Definition of Human Capital

The concept of human capital originates from Becker's (1970) study on the investment in an individual's education and training and how it is similar to an investment in equipment. Human capital can be considered as the accumulation of skills, knowledge and expertise from training and the work experience of an individual.

Wahab (2004) mentioned that knowledge can be acquired in different ways. It is acquired by individuals or groups through both formal and informal processes, which include experience, training and learning. Participation in the education system and management training courses are examples of formal training. Meanwhile, non-formal training includes knowledge gained through one's own experiences. The skills and knowledge acquired by employees will increase their value in the marketplace and the presence of such individuals will form part of the capital or assets of an organization.

A manager who has a proper education and work experience is more likely to be able to accomplish the organization's strategy. A study conducted by Seeba *et al.* (2009) testing the effect of strategy type and managerial characteristics indicated that education, work experience and organization tenure are the significant factors in achieving the organization's strategy. The findings support the belief that human capital contributes to an organization's competitive edge.

c. Human Capital and Small Medium Enterprises

Most SME are restricted in terms of both financial and human capital resources due to their size and limited financial support (Hudson *et al.*, 2001b). SME need to compete with larger firms not only in terms of products but also in terms of high quality human resources. Due to the competitive pay and benefits offered by larger companies, most of the educated and skilled human resources are taken up by these companies.

Those SME that are very specialized in their products and services will require very specialized manpower for its operations. However, lacking financial resources, most SME require their employees to multi-task. A consequence of this is that they will also require their employees to be more pro-active and able to make their own judgments and decisions.

d. Human Capital in Relation to Performance Measurement Systems

A performance measurement system is one of the many management systems that require an initial level of understanding in order to design and implement it. It requires the right people with the right managerial and technical capabilities to achieve this. However, for SME this is one of the constant problems they face. Insufficient resources and human capacity, especially at the managerial level, can have a negative impact on any performance measurement initiative (Bierbusse & Siesfeld, 1997; Bourne, 2001; Bourne, *et al.*, 2005; McCunn, 1998). Therefore, the chances of an effectively designed performance measurement system being utilized to good effect should be better in those companies whose managers or owners have a strong business and management educational background.

Kaplan & Norton (1996), Richardson (2004), Gomes *et al.* (2011) and Tung *et al.* (2011) stress the importance of training in performance measurement for both management and staff prior to implementation. This enables the members to fully understand the structure of the PMS and how it affects the overall performance of their organization. Sousa *et al.*'s 1996 survey respondents considered lack of employee training as the top obstacle to successful performance measurement. The difficulty of defining measures, which was in second place, was ascribed to lack of training and skills on the part of managers and employees.

Other research indicates that, where external assistance in the form of academic researchers or consultants is employed, a PMS may be successfully implemented (Bourne, *et al.*, 2005; Chan, 2004; Turner, *et al.*, 2005). For SME, this is a viable way of optimizing the chance of success for their system through the accurate identification of the relevant critical success factors and key performance indicators.

2.6.3 Conceptual Framework of performance measurement adoption in Service Sector SME

Analysis of the literature on performance measurement systems, together with that describing SME and the service industry, led to the development of this conceptual framework to support the investigation of adoption of PMS in service sector SME. The framework comprises two parts: the six best practices of PMS and the six factors which

show the greatest influence on adoption level. The levels of PMS adoption within the SME in this study will be categorized as traditional, balanced or integrated and the categorization will depend partly on how well an organization operates each of the six best practices identified. Such operation is determined by certain organizational contextual factors which either drive or impede the adoption of performance measurement. Figure 12 provides a visual representation of the key factors that emerged from the literature review. Justification for the inclusion of each of the factors in the two parts of the framework is provided below.

The Best Practices

Globerson (1985) in Neely *et al.* (2000) states that measurement needs to have an explicit purpose based on what the organization hopes to achieve from their system. Several distinct purposes for PMS have been identified. These include goal and strategy achievement, monitoring and control and as a mechanism for continuous improvement (Lynch and Cross, 1991).

Once an organization has clearly identified the purpose of the system, it then needs to establish bases to ensure that appropriate measures are selected. The process should take the inherent characteristics of SME into account and consider factors relating to service such as contact time and level of interaction (Fitzgerald *et al.*, 1991). It is evident from the literature on PMS that a truly effective system is based on strategic objectives (Lynch and Cross, 1991; Kaplan and Norton, 1992) and the selection of measures should include both financial and non-financial indicators of performance. The critical success factor is that the system allows for the identification of the cause and effect relationship between the measures and the strategy involved (Kaplan and Norton 1996; Lawrie and Cobbald, 2004; Dahlgard-Park, 2009).

The literature review also showed that it is necessary for an individual or team within the organization to be assigned responsibility for implementation and overseeing of the measures. The person or team with accountability for the PMS needs to ensure that the measures are sufficiently flexible. When the measures do not reflect the actual performance, it is essential that they can easily be changed and updated. An effective PMS will be responsive to changes in the internal and external environments and to feedback from shareholders within and without the organization (Garengo *et al.*, 2007; Nwokah, 2009). The system should also be capable of highlighting change and feedback for the decision-makers.

De Tonia and Tonchia (2001) pointed out that, during the development of the PMS, it is essential to ensure that it is aligned with and integrated into the other management systems of the company. This alignment can only be successful if the technology supports it. They further argue that the relationship between measures within different business units is more

effective when the cause and effect relationship between financial targets and performance drivers is considered at the beginning of the PMS development process.

The implementation of these best practices within a firm is subject to a number of driver and barrier forces. The existing literature, which is mainly concerned with performance measurement in the manufacturing sector, shows that these forces can be categorized into six key organizational factors. These have been used to frame the investigation of PMS adoption in the case study companies and are summarized below.

The organization contextual factors

An effective PMS is aligned with organizational strategy. However, evidence from the literature review indicates that, where there is misalignment of strategy across an organization, it leads to business units pulling in different directions. Such misalignment affects the integration of the PMS with other management systems. The evidence also shows that the strategy of the organization must be communicated properly throughout the firm if conflict is to be avoided. In this study, we will examine whether the same issues of organizational strategy exist in the service sector.

The empirical findings from the studies of Gubitta and Gianecchini (2002) and Garengo and Bititci (2007) signal the significance of the corporate governance structure for the success of a PMS. In those SME where ownership and management are separate, the PMS is often more effective. The success of PMS adoption is influenced by the degree of the owner's involvement at both corporate and operational levels.

A further factor that emerges from the study is the influence of management style. Bititci et al. (2004) and Garengo and Bititci (2007) found that an appropriate style is necessary for different settings and stages of the PMS process. While an authoritative style is useful in jump-starting a system, a move to a more consultative approach is required to sustain the system.

An organization culture that promotes learning and development has a better chance of successfully adopting a PMS (Bititci et al., 2004). Johnston and Pongatichat (2008) expanded this idea, pointing out the importance of assessing the company's current culture to ensure that the proper measurement system is chosen.

Proper management information systems require sufficient levels of investment in information technology (IT). For effective performance measurement, there should be high IT integration and a low data burden (Garengo and Bititci, 2007). The problems for SME are their perceived inability to obtain the funds needed for such investment and to attract sufficiently qualified personnel to man the system. Gomes et al. (2010) found that, although

a large company is more likely to be able to invest funds in IT, this does not guarantee successful implementation of the PMS.

The two aspects of human capital which are the keys for successful operation of a PMS are management training and the previous work experience of senior personnel in the organization. Where these two elements are appropriate, then the management team can develop a PMS relevant to the needs of their company (Bourne *et al.*, 2005; Tung *et. al.*, 2011).

These six organizational factors have been shown to be crucial to the success or failure of PMS in manufacturing SME. At present, the literature does not indicate whether these have the same impact in the service sector. It is also the case that the factors have not been analyzed concurrently, so the relationships between the factors are unclear. Previous research has also failed to identify a core factor which acts as a 'string', pulling the other factors.

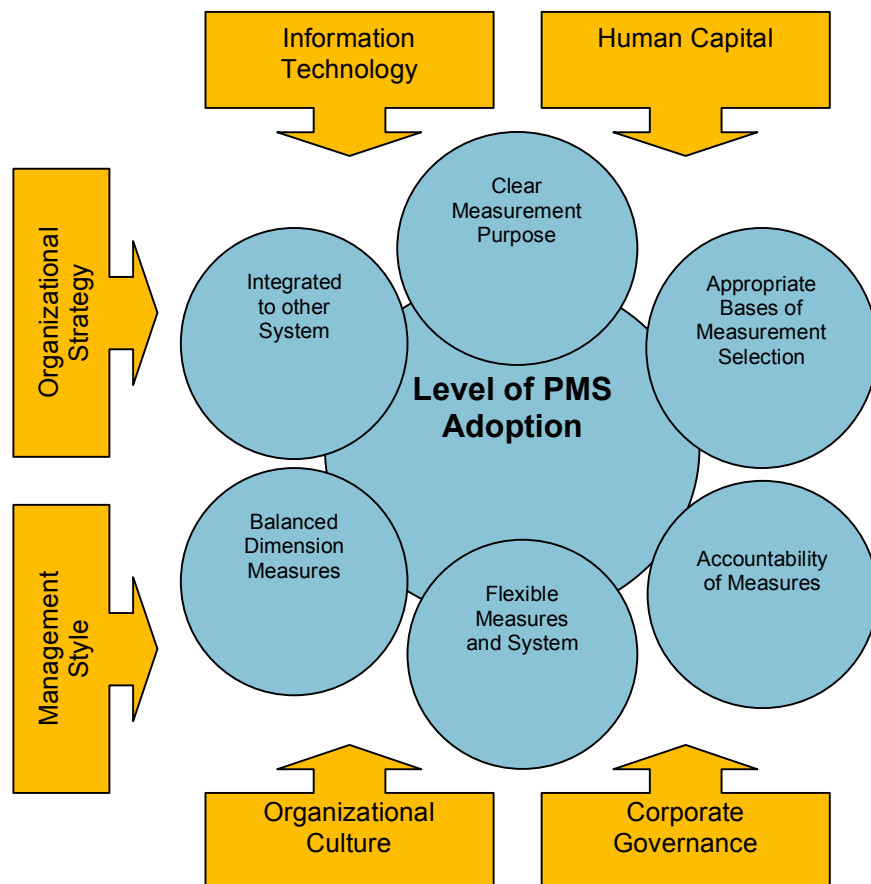


Figure 12. Proposed Conceptual Framework of PMS adoption by Service SME

The conceptual framework (Fig. 12) developed from the literature review will be utilized to answer the following questions:

RQ1 - What is the current level of PMS adoption in Brunei Service SME?

RQ2 - How do organization contextual factors influence or hinder the adoption of PMS by service sector SME in Brunei Darussalam?

2.7 Chapter Conclusion

This critical analysis summarizes existing knowledge of the design and adoption of performance measurements systems in relation to service sector industries and to small and medium-sized enterprises operating in that sector. The results of this study show what is best practice in performance measurement and highlight what pushes firms towards adoption of measurement systems as well as what deters this. The findings of the study indicate that little empirical research has been conducted into how such companies can utilize contemporary systems. It also emerges that much of the existing research reported in the literature involved manufacturing rather than service sector industries (Parameshwaran *et al.*, 2009).

The literature review provides an opportunity to examine the variations in how small and medium-sized enterprises are defined. The definitions examined are the ones used by the World Bank, the E.U. and A.P.E.C. (Asia Pacific Economic Cooperation). This research adopts the A.P.E.C. definition which includes a staff level of fewer than 100 employees because Brunei is a member of this organization. Further to this, research into the distinct characteristics of such companies is analyzed. What is evident from the studies of Longenecker *et al.* (1994) and Hudson *et al.* (2001) is the difficulty faced by SME in accessing funds and other resources. In addition, Gadenne and Sharma (2009) pointed out the relative lack of managerial and technical skills in this size of company.

Performance measurement systems developed for small and medium-sized enterprises began to appear in the 1990s. Nadeem Kureshi *et al.* (2010) noted that this development was linked to the constraints on their resources which, in turn, affect their willingness to invest in quality management activities. It is clear that many smaller businesses still rely on performance measurement systems that focus narrowly on financial measures (Hudson *et al.*, 2001). Few researchers other than Hudson and his team have investigated how exactly SME can and should measure performance although both Cocca and Alberti (2009) and Garengo (2009) did look at how smaller companies can evaluate systems to select the most suitable one for them.

The literature on the use of PMS in the service sector indicates that it is not highly developed. Brignall and Ballantine (1996) attributed this to lack of exposure to competition while Pitt and Tucker (2008) pointed out the subjective nature of performance indicators in this sector. Zigan *et al.* (2008), in a study of European hospitals, examined how intangible resources might be managed and highlighted the importance of identifying the relationship between these and the firm's tangible resources. This need for balance emerged from other studies too, for example that of Wisnieki and Stewart (2004).

Bititci *et al.* (2004) noted the impact of organizational culture and management style on PMS and how these factors themselves are influenced by the PMS. The difficulty of defining the measures and lack of training were two barriers identified by Sousa *et al.* (2006). In a survey conducted by De Waal and Counet (2009) differences were found in the perceptions of practitioners and academics on the forces that influence the degree of adoption of a performance measurement system.

From the research available, six key contextual factors have been identified, which are organizational strategy, corporate governance, organizational culture, management style, human capital and the use of information technology. Nonetheless, certain aspects of the driver and barrier forces have been neglected in studies to date. While the studies conducted by Bititci *et al.* (2004) and Garengo *et al.* (2007) investigated the relationships between significant factors empirically, they did not look at the totality of factors. The review has also identified a lack of explicit investigation into what Neely *et al.* (2000) called the "people" factor, that is, human capital. Furthermore, the major studies examined in the literature review focused on developed rather than developing countries (Amizawati *et al.*, 2010).

In summary, the literature review shows gaps in empirical research into the use of PMS in small and medium-sized service companies operating in non-first world countries. The research question to be addressed in this paper will contribute data to expand knowledge in this area.

Thus, this research offers several contributions to the PMS literature

1. In the first place, this thesis will contribute mainly towards an extension of Performance Measurement Systems theory in SME as a whole. The factors influencing adoption of a PMS were conceptualized after the initial research into current literature (see Figure 12). This study explores the relevance of strategy, culture, information technology, corporate governance, management style and human capital in determining the attributes of PMS. These six factors are then tested in practice to assess their relative importance in service sector SME, and modifications to these may be made, depending on the findings.

2. Secondly, while investigating the level of adoption of PMS in service sector SME, this study explores other 'best practices' too, taking into account common features such as dimensions of measurement, bases of measures selected, purpose of measurement, accountability of measures and flexibility and integration of measures.
3. Thirdly, this study contributes to the literature by providing a new contextual perspective on the issue of PMS development and practices by examining practices in Brunei. Given that existing theory has its cultural boundaries, this study seeks to extend knowledge within the setting of a developing country.
4. With regard to the practical aspect of this study, practitioners will be able to use the research findings to establish a first-hand understanding of the current level of PMS in that setting, before making any attempt to develop their own studies. It will also provide them with first-hand information on factors that are commonly experienced by service sector SME in Brunei as they attempt to develop PMS.

The next chapter describes and justifies the chosen research methods for this study.

Chapter 3:

Research Methodology

3.1 Introduction

The first section of this chapter will explain the research process, with the three research paradigms briefly explained in order to illuminate the setting of the research methodology and method. The next section will explain different types of research approach and the differences between qualitative and quantitative methods. The use of quantitative and qualitative research methods in this study are explained and justified separately in phases 1 and 2 of data collection. The research population and sample are also explained briefly to inform reader about the research setting. A detailed explanation of the research instruments is also included in their respective phases. After that, the pilot studies of this research and the results and recommendations are detailed. The methods to be used for the data analysis are also introduced in this chapter, as well as the various tests that were conducted in order to maintain the quality of the research design. Finally, the research ethics are described before the research design of the whole thesis is laid out.

The research was carried out using an interpretivist paradigm as a basis to increase knowledge of factors that influence SME to adopt a performance measurement system. A case study on a developing country, Brunei, was used to answer the research questions. Survey research through questionnaires, interviews and secondary data was used to obtain information. Investigation of the research inquiry is divided into two sequential phases in order to answer two different but related research questions. The purposes of this sequential mixed method of study are, firstly, to understand the current pattern or level of PMS adoption and secondly, to test and confirm whether the factors that were identified in the largely Anglo-Saxon literature as influencing the design and use of performance measurement systems actually pertain in Brunei. In the second phase, the findings will be analyzed to explain the similarities and differences found in the first phase and to provide some insight into the research problem.

The purpose of the research is to extend Performance Measurement Systems theory in SME as a whole. It is expected that when the research study data is collected and analyzed, it will generate a rich understanding of the phenomena, test the theory conceptualized in chapter 2 and lead to the production of a more concrete theory.

3.2 Research Process

In social sciences, the research process falls into four stages (Hiles, 1999). The first and most important process is the setting of the researchers' *paradigm*. A paradigm is an assumption about truth, reality, knowledge and how knowledge will be used. There are three common paradigms in social science research i.e. positivism, interpretivism and constructivism (Raymond, 2001). The second stage is the *strategy* of how the research inquiry will proceed –that is, how the researcher will go about designing the research, answering questions such as whether there will be a pilot study to test the questions to be presented to the subjects in the actual interview and what the construct of the research questions and the measurement of the construct will be. The third stage deals with the *method* of the research. It involves the selection of the most appropriate method of collecting the data. There are various methods available for this. Experiments, surveys, questionnaires, and case studies are some examples of available research methods. The next stage of the research process is the *analysis* of the data collected. Various methods can be employed, such as grounded analysis, discourse analysis, content analysis and quantitative analysis.

In practice, the types of strategy, method and analysis of the research will depend on the paradigm of the researcher. The researcher's understanding of the paradigm will mould the research approach of the paper.

The next section will attempt to compare and contrast the three common paradigms used by the social scientist in approaching their research and to explain what motivates the researcher in adopting a paradigm.

3.3 Research Paradigms

A paradigm is a set of shared assumptions or way of perceiving the world (Oates 2006). Different philosophical paradigms have different views on the nature of existence (ontology) and the way of understanding of what it means to know (epistemology) (Crotty, 1998). This section will explain the ontology, epistemology and methodology of the different paradigms (theoretical perspectives): positivism, interpretivism and critical inquiry. This is required to determine the perception of knowledge that will influence the approach used in a research project. Danermark *et al.* (2002) asserted that the conditions determining the suitability of a certain method will depend on the relationship between the meta-theory and the methods.

Table 7. Differences between paradigms

Positivism	Interpretivism	Critical Inquiry
Experience is taken to be objective, testable, and independent of theoretical explanation	Data is not detachable from theory	Subjective theory is based on ideology and values; both qualitative and quantitative data are acceptable
Theories are held to be artificial constructions or models, yielding explanation in the sense of a logic of hypothetical deduction	In the human sciences, theories are mimetic reconstructions of the facts themselves, and the criterion of a good theory is the understanding of meaning and intentions rather than deductive explanation	The material world consists of structured contradictions and/or exploitation which can be objectively known only by ideological biases
Generalizations are derived from experiences and are independent of the researcher	The generalizations derived from experience are dependent upon the researcher	The generalizations derived from experience are dependent upon the researcher
The language of science can be exact, open to formalization and literal	The languages of the human sciences are irreducibly equivocal and continually adapt themselves to changing circumstances	Structural or historical insights reveal contradictions
Meanings are separate from facts	Meanings in the human science are what constitute the facts and these are inseparable from their meaning for agents	Uncovers hidden interests, exposes contradictions and enables more informed consciousness

Source: adapted from Gephart (1999), Myers (1997), Weber (2004) and Willis (2007)

Positivism (scientific method) is the oldest method of inquiry and evolved from the work of Auguste Comte in 1830s which stated that the scientific method of the natural sciences is also applicable in social science in developing theories (Oates, 2006; Willis, 2007). Crotty (1998:67) described positivism saying, '*(it) follows the methods of the natural sciences and, by way of allegedly value-free, detached observation, seek to identify universal features of humanhood, society and history that offer explanation and hence control and predictability*'. The ontological stance of positivism is that the researcher and the reality are separate (Weber, 2004). When we look at it from the positivist point of view, researchers do not view the world as such but rather, they ignore the reality that the world is an open system, with different strata and different emergent powers in the strata (Stockman, 1983). Due to this conception of the world, such researchers have been using the same meta-theory and methodological approach as those used by the natural scientist. The goal of a positivist is to uncover truth and facts as quantitatively-specified relations among variables through repeated empirical observations (Neuman, 1994). Positivist attempts to verify hypotheses involve valid, reliable and precisely measured variables (Weber, 2004). Thus, generalizations are derived from experiences and are independent of the researcher (Myers, 1997).

Interpretivism is another philosophical paradigm. This philosophy rejects the positivist's view that the researcher and reality are separable. Interpretivists attempt to interpret and

understand how people see the world (Neuman, 1994). The interpretivists believe that humans are influenced by the subjective perceptions of their environment and thus the ontological position should not be separate from reality. Thus, the criterion for good theory development is through understanding of meaning and intentions rather than through a deductive approach (Myers, 1997).

Critical Theory is the paradigm most prominent in social science. Critical theorists reject the positivist assumption that knowledge can be deducted from scientific method. According to Crotty (1998), critical theory was developed by The Institute for Social Research in Germany and based mainly on the thoughts of Karl Marx. There are many explanations of critical theory in social science but this thesis highlights assumptions from critical realism. Critical theory differs from interpretivism in that, *'the critical realist is free to see the cause of an event elsewhere in the ontological spectrum. Attention turns away from the flux of events and towards the causal mechanisms, social structures, powers and relations that govern them'*, (Ackroyd and Fleetwood, 2000:13). Therefore, for the critical theorist, in order to understand and derive explanations in the field of social science, the researcher needs to go 'deep', that is, beyond the surface of human experiences to understand the relations at the structural level.

For the critical theorist, the motive of all science is for us to learn from the knowledge we gain and to use it to drive change, in order to remove the illusions that exist (Sayer, 1993). Researchers should keep in mind that the purpose of their research is to give back to their community or society. This will indirectly affect the way things works and thus will stimulate change in society.

In social science, therefore, the researcher should treat knowledge as an agent to empower emancipatory change of the society rather than as a mere object. However, it could be argued that this will influence the objectivity of the research as the researcher starts to get involved with their subjects. However, Sayer (1993) argues that this is the purpose of learning i.e. to help the subject to change their understanding of their situation. Objectivity itself could be blamed as one of the barriers to change in society and that will affect the progression of science itself (Scheffler, 1967).

3.4 Research Approaches

There has been significant confusion between the terms research methodology and research method. Research methodology is the strategy, plan of action, process or design lying behind the choice and use of particular methods. It links the choice and use of methods to the desired outcomes. It also refers to the rationale and the philosophical assumptions that underlie a particular study and explains the researcher's epistemological

views and approaches to reality. In contrast, a research method is the technique or procedure used to gather and analyze data related to a research question or hypothesis, and forms only one strand of the whole research methodology (Crotty M., 1998:3).

Inductive and Deductive Research

Deductivist research works from general reasoning to specific. Hypotheses are developed from a theory and the research then tests whether the findings confirm the theory (www.socialresearch methods.net). Popper in Sayer (1994:169) argued that when the premises of an argument are accepted, it is not possible to reject that argument without contradiction. This can only be done by falsification. Deductivists claim that the idea that theories can be developed through observation is not acceptable. Blaug (1994:xiii) stated that, *'I argue in favor of falsificationism, defined as a methodological standpoint that regards theories and hypotheses as scientific if, and only if, their predictions are at least in principle falsifiable, that is if they forbid certain acts/states/events from occurring'*.

Meanwhile, inductivism is the opposite of deductivism and it takes more of 'bottom up' approach. Tentative hypotheses are developed through observation in order to arrive at a conclusion or theory (www.socialresearchmethods.net). However, according to Sayer (1994), *'The problem of induction is probably the favorite puzzle of philosophers of science. It concerns the fact that we are not logically entitled to assume that because a particular sequence of events has always been observed to occur in the past it will do so in all cases'*.

Alternative research approaches

A research method can be categorized as either quantitative or qualitative research or even a mixture of the two. There should be a strong reason for choosing one type of research in preference to another. As mentioned previously, the purpose of this research is two-fold: to understand the pattern of PMS adoption in Brunei and to understand the factors influencing that adoption. In order to answer such an inquiry, a mixed method of quantitative and qualitative approaches to data collection was employed.

For social scientists, the heterogeneous nature of their subjects creates dilemmas about the most effective research design to utilize; qualitative or quantitative. It is crucial that the social science researcher understands the nature of the object under study and which epistemological position they should adopt. Van der Ven (2007) explains that intensive research techniques are concerned with answering the "how" question whereas extensive research design focuses on the "what" question. The two approaches have strengths and weaknesses.

Table 8. Assumptions behind the use of qualitative and quantitative methods

Quantitative	Qualitative
There is an objective truth out there	There is no one agreed truth
This truth can be revealed by the scientific method	Is concerned with attempting to decode meaning and different interpretations of phenomena
Relationships between the variables can be measured systematically and statistically	Is concerned with emergent themes and idiographic descriptions as part of the research process
Research takes place in carefully controlled settings	Takes place in natural settings
A key concern is that measurement is reliable, valid and generalizable	Takes a holistic view
Uses clear predictions to link cause and effect	Recognizes the active role of the researcher in the research process

Source: Cassell and Symon (1994)

Qualitative research allows the design to evolve as the study progresses and can produce rich data as a result of the two-way communication process between researcher and respondents in the study (Sayer, 1993). According to Van der Ven (2007), researchers and subjects work together to develop an in-depth understanding of the situation. Criticism of this methodology centers on its perceived lack of representativeness and of objectivity, given that the researcher is the instrument for collecting the data. The following table summarizes some of the qualitative methodology available.

Table 9. Some Different Qualitative Methods

Type	Description
Case Study and Ethnographies	In the case study, data is gathered by observing, interviewing, etc. the subjects by the researchers. (Yin, 1994) Ethnography is also a form of field research but more focused on the observation of the culture of the subject being studied. Note-taking, fieldwork and transcription of the notes into writing are the stages of ethnographic study. (Baker, 1998)
Action Research	This type of research is more concerned with directing changes in the subjects being studied. It will try to get the subjects involved in order to make such changes. It focuses more on the outcome of the research (Baker, 1998).
Grounded Theory Research	Theories are developed from the collected data by an inductive process to form generalizations, theoretical concepts and hypotheses. This process is repeated until theoretical saturation is reached. (Baker, 1998)

Source: Yin (1994) and Baker (1998)

Quantitative research aims to find common properties or patterns and uses statistical analysis to eliminate any bias on the part of the researcher. The research question is clearly identified in advance and does not change during the data collection process. The data collected is considered valid for generalization. The most common method is survey design. Nevertheless, Sayers (1993) points out that extensive research design ignores both contextual detail and the heterogeneity of the samples in order to satisfy the demands of representativeness.

3.5 Research Design for the Thesis

The following sections explain the selected theoretical perspective, methodology, data collection methods and analysis employed in this study.

Interpretivism: The Theoretical Perspective of this Research

There are two research questions in this thesis. The first research question involves investigation into the patterns of the level of PMS adoption in Brunei. Here, a survey questionnaire was used as a large sample is required to establish the current pattern of PMS adoption and therefore answer the 'what' aspect of this thesis research question. The second question seeks to investigate the possible reasons for such patterns in Brunei, and requires a more in-depth study. For this reason, interviews have been selected as the best method to extract information. The richness of information to be gathered from interviews with the subjects will enable the researcher to consider various possibilities in the attempt to answer the research question (Raymond-Alain Thietart *et al.*, 2001). This research attempts to understand the phenomena through the meanings that the interviewees try to communicate. It was felt that there were different possible responses to the questions posed to the subject interviewees and that the researcher would need to interpret these to arrive at an answer to the second research question. This requirement for researcher interpretation pushed the researcher to adopt an interpretivist stance as this would provide the greatest opportunity for rich answers to the research questions to emerge (Myers, 1997). This will also enable the researcher to further understand the outcome of the investigation conducted to answer the first research question.

Case Study: Methodology used in this Research

Yin (1994) described case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident.

According to Benbasat (1987), the important characteristics of a case study are:

1. Focus on depth rather than breadth
2. Natural setting: it is examined in its natural setting.
3. Holistic study: focuses on complexity of relationships; is interconnected not individual.
4. Multiple sources and methods: wide range of data sources

A case study can be descriptive, exploratory or have an explanatory purpose (Yin, 1994). In an exploratory case study, the researcher adopts a positivist epistemological stance. Here, the researcher attempts to define their hypothesis and generate theory from it. In an explanatory case study, on the other hand, the researcher adopts an interpretivist

epistemological stance. This goes further than a descriptive study. The researcher attempts to explain the reasons an event in the case(s) being studied happens. In a descriptive case study, the emphasis is on more detailed analysis.

Case studies can be either single or multiple case designs (Yin, 1994). A single case study is used if there are no other cases available for replication while multiple case studies can be used to compare the similarities and differences between cases (Yin, 1994). The findings of the latter are more robust than those of the former.

Yin (1994) advises that there are critical issues, such as selection of cases (units of analysis) and sampling, to consider in conducting case studies. Silverman (2001) mentions two main types of sampling i.e. purposive and theoretical sampling. In a purposive sampling, members of a sample are chosen with a 'purpose' to ensure all key constituents of relevance are covered and, within each of the key criteria, some diversity is included (Ritchie and Lewis, 2006). In theoretical sampling, the researcher chooses what data to collect next depending on whether it is likely to contribute to the development of theory (Glaser and Strauss, 1967).

This research uses a case study method as it offers the richness and depth of information that is lacking in other methods and is the method best suited to fulfillment of the objective of the research (Yin, 1994). In addition, due to the nature of the research questions and the contemporary nature of the phenomena in a real-life context, this approach is the most suitable (Benbasat *et al.*, 1987). Multiple case studies were used in order to compare and contrast factors that affect the phenomena being studied. In addition, a quantitative method was used to collect data to answer the first research question as this seeks to establish patterns.

Mixed Methods: the Method of Data Collection used in this Research

Given the limitations of both intensive and extensive methods, the current trend is towards a combination of the two. Danermark *et al.* (2002) and Creswell (2009) explained that using qualitative and quantitative methods in parallel can shed more light on the phenomena under investigation. According to the authors, it is also important for researchers to have a clear idea of their own ontological perspective, which should not be just based on the research question. There are various valid reasons for mixing methods and three were mentioned specifically.

The first purpose is to use the quantitative method and qualitative method side by side in order to shed as much light on the phenomena as possible. Here, the main purpose is to examine more explicitly particular elements of the research with the help of a quantitative method. Another purpose is to examine how common the phenomena of a qualitative study

are. Thus, the phenomena would be tested using a quantitative approach to gauge its commonality. The other purpose is to use the mixed method for theory development. As Danermark *et al.* (2002) said, “... *quantitative analyses might indicate connections and conditions not to be found in qualitative analysis, thus furthering theory development*”.

Quantitative strategy can elucidate regularities and is driven by the epistemic assumption that there is an existing reality which must be objectively studied, so is the most suitable for the research question aimed at establishing existing patterns, such as in the application of performance measurement system best practices in service sector SME in Brunei.

A qualitative research study was adopted as the strategy for answering the other research questions in order to facilitate in-depth and contextual analyses of the issues under study. The phenomena under study and the context of Brunei as a unique developing country require a methodology that is flexible and holistic and allows the discussion of emergent themes or symmetry of outcomes (Cassell and Symon, 2004). Case study matches this objective as it is an empirical inquiry that investigates contemporary phenomena within its real-life context (Cassell and Symon, 2004).

After deciding on the type of data required (qualitative or quantitative or a mix of both), the next methodological decision is to decide on the type of research methods suitable for answering the research question. There are various types of research method available and the following section provides justification of those chosen for this research.

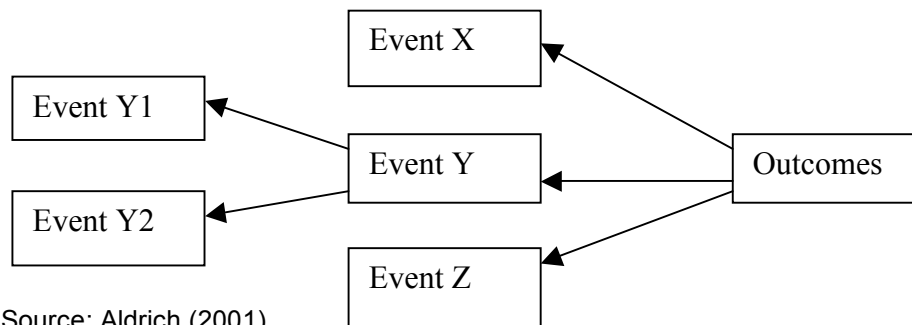
In order to understand the current development of performance measurements systems in service SME, especially in the case of Brunei Darussalam, it is appropriate to utilize a mixed method of research, conducting both extensive research through a questionnaire and intensive research through interviews with managers in the service sector SME. This methodological triangulation will enable the research findings to demonstrate both breadth and depth in respect of the current development of performance measurement systems. Further to this, secondary data will be used to expand our understanding of the reasons behind the outcomes shown in the analysis of the first phase data. Bryman and Bell (2003:291) explained that, ‘*Triangulation entails using more than one method or source of data in the study of a phenomenon*’.

3.5.1 Phase 1: Self-Administered Questionnaire

The purpose of the questionnaire is to develop an understanding of the current level of use of performance measurement systems in service sector SME in Brunei Darussalam. The questionnaire will allow the collection of data from a large sample size and is thus suitable for the conduct of extensive research.

In this type of research, the main idea is to find the common attribute or pattern of a population as a whole. Or, as Van de Ven (2007) describes it, extensive research emphasizes the question of 'what'. He mentions that 'what' questions use the variance or 'outcome-driven' model of explanation of the antecedent and consequence (Aldrich, 2001). This epistemological standpoint can be diagrammatically illustrated as shown in the following Figure 13.

Figure 13. Extensive Approach



Extensive research is heavily focused on taxonomic groups, where the individuals in the research are characterized into a similar category without taking into consideration whether there is any actual relationship existing between the members. It is also necessary for the researcher to set criteria for the samples before the research progresses in order to make sure it is representative of the population being studied. However, this technique of population sampling ignores the heterogeneous nature of the sample that characterizes the society. As a result, it sacrifices the potential of causal explanation of the object in order to satisfy the criterion of representativeness (Sayer, 1994).

The drawback of a highly standardized questionnaire is that it creates a meaningless comparison because different respondents might understand the same question differently for a variety of reasons, which might include *inter alia* their upbringing and their grasp of the English language.

Van de Ven (2007) commented that much research has focused on the 'what' question. However, there has been growing interest in answering the 'how' question. Increasing interest in the process of how society evolves, changes and adapts over time has tempted a number of researchers to explore the 'how' question. In this research, a questionnaire will be utilized to address the 'what' question, which is to identify the pattern of PMS practice in service sector SME in Brunei. This will be followed by an intensive approach to answer the 'how' question and this will use interviews, firstly to confirm the findings from the quantitative data and secondly, explore the responses in greater depth. This should provide an insight into whether a relationship exists among the variables.

Survey Instrument

The instrument used for this survey was in the form of a questionnaire. The questionnaire was designed to capture meaningful information that could be used to test the research question developed in this research. It comprised several sections of close-ended questions, each testing a different aspect of PMS practices and adoption.

The first and second sections of the questionnaire aimed to extract the demographic data on the respondents. It represents a control variable for potential differences in responses which is unrelated to the research questions being tested. The first section of the questionnaire aimed to obtain basic information about the respondent, such as their gender, age, highest level of education completed and their position within the company. The second section of the questionnaire was designed to obtain basic information about the organization, such as the number of years it has been in operation, the number of employees and the type of service sector the organization is involved in.

The third section of the questionnaire was designed to obtain factual information about the organization's current PMS, with questions based on the six 'best practices' criteria (refer to Section 2.5.1.7 (Table 4) for the items used to measure each variable which emerged from a range of previous studies conducted by various researchers). The final section consisted of the six organizational factors found in the literature to act as driver or barrier forces. Using the five-level Likert scale from 'Strongly agree' to 'Strongly disagree', the respondents were asked to indicate their response to each of the questions related to the variables. The final version of the questionnaire is attached in Appendix 5.

Specific definitions of the constructs used in this research are summarized in Table 10.

Table 10. Definition of Constructs Used in this Research

Constructs	Definition
Performance Measurement System	A system that, 'enables informed decisions to be made and actions to be taken because it quantifies the efficiency and effectiveness of past actions through acquisition, collation, sorting, analysis, interpretation, and dissemination of appropriate data' (Neely, 1998)
Traditional PMS	The traditional performance measurement system is characterized as being an inward and backward looking system. (own)
Balanced PMS	The balanced performance measurement system is more concerned with the structure, mechanism and justification for a balanced system. (own)
Advanced PMS	The integrated performance measurement system is more concerned with its potential extended use and how it could be used to benefit the whole organization. (own)
Performance Measurement Dimensions	It explains the measures being used by the organization, which are financially oriented, non-financially oriented or both. (own)
Performance Measurement Bases	It explains the bases used by the organization in selecting measures to be monitored. These could be based on the organization's mission and vision or internal and external stakeholders' feedback. (own)
Performance	It explains the purpose of developing and adopting a performance

measurement purpose	measurement system. (own)
Performance measurement accountability	It explains the person or group responsible for the measures being developed. It also means that opinions of all stakeholders were taken into account in developing the system. (own)
Performance measurement system flexibility	It explains the ability of the system to be continuously improved as a result of the effects of internal and external changes. (own)
Performance measurement system integration	It explains the ability of the system to integrate with other parts of the management system of the organization. (own)
Organization Strategy	The determination of long term objectives and setting of the necessary action steps with the identification of stakeholders' needs. (Chandler, 1964)
Corporate Governance	The composition and specification of tasks and rights of the different participants of the organization such as board of directors, managing directors, managers and owners. (Brunninge, <i>et al.</i> , 2007; OECD, 1999)
Organization Culture	'A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems'. (Schein, 2005)
Management Style	'A recurring set of characteristics that are associated with the decisional process of the firm or individual managers' (Tull and Albaum (1971) in (Poon, <i>et al.</i> , 2006) and the attitude and behavior of managers towards their subordinates in achieving organizational objectives.
Information Technology	Information technology is the use of machines and programs to collect and analyze data and subsequently produce information to be used as a basis for decision-making by managers. (own)
Human Capital	Human capital is the accumulation of skills, knowledge and expertise via training and work experience of an individual. It also includes assistance received from external expertise such as government agencies and consultants. (Wahab, 2004)

Pilot Study: Survey Instrument

The questionnaires were distributed to managers of service SME in Brunei Darussalam as part of the pilot study. A pilot study, carried out prior to the larger scale study, has several objectives and benefits, including the following:

1. To test if all the 'items' used to measure the variables are appropriate in the context of Brunei. (Correlation coefficient for each item).
2. To test if all the variables have given a meaningful relationship to the dependent variables.
3. To check the scales of the variables (Construct validity).
4. To obtain comments and feedback from the respondents on problems they encountered in answering the questionnaire.
5. To check the feasibility and completeness of the sampling procedure.

The pilot study made use of SPSS to perform several tests such as a t-test, bivariate categorical variables correlation (r-values) and factor analysis. The t-test was utilized to compare the means of different groups. Meanwhile, bivariate or r-value was used to test the strength of relationship between the variables. To test the 'items' of the variables, factor

analysis was employed. The findings from the pilot study were used to make changes required and introduce improvements to the questionnaire where necessary.

Results of Pilot Study 1

Twenty copies of questionnaires were distributed but only fourteen were returned. Based on the cluster analysis, there were 2-cluster solutions, with 9 samples in cluster 1, and 2 in cluster 2. Additionally, the respondents also commented on the structure and readability of the questionnaire. Their comments can be seen in Appendix 7. Based on these comments and recommendations, the questionnaire was amended and a second pilot study was conducted. The following section briefly explains this.

Results of Pilot Study 2

Five managers were asked to respond to the revised questionnaire. Most of the comments related to the arrangement of the survey questions and the grammar. Thus, only minor amendments were made to the questionnaire before it was sent for the actual survey distribution (see Appendix 5 for the final version of the questionnaire).

Sample Frame: Self-Administrated Questionnaire

According to Baker (1998), in deciding which sampling method to use, there are three major issues to consider. The first issue is to look at resource limitations, for example, cost and time. The second issue is the homogeneity of the samples. If the subjects are all the same, a small number will be sufficient in order to make a representation for the study. The third issue to consider is whether the research attempts to make inferences about the larger population. A probabilistic sampling will be more appropriate than a non-probabilistic sampling in order to achieve the latter. Baker (1998) suggests that the former type of sampling means that every member of the defined population has a probability of being selected in the sample. Nevertheless, the use of non-probabilistic sampling does not mean that such inferences are not achievable.

The sampling frame for the first phase of this research was drawn from the list given by the Labor Department of those companies categorized as service industry. The list of companies identified as belonging to the service industry was categorized into either SME or large companies, on the basis of the number of employees. This research only took into account the companies still in operation. Companies less than a year old were also excluded from the sample as these companies are unlikely to have produced any significant results as yet.

The unit of analysis for this research is an organization that falls under the definition of SME with their main activity being the provision of services and for-profit. These companies are classified as service-related businesses with employees of fewer than 100. The sample of

service SME was obtained using probabilistic sampling. From a list of 4,992 provided by the Brunei Labor Department, 357 were selected (see Appendix 2). A questionnaire was devised and the purpose of the inquiry was explained when this was delivered.

The questionnaire was presented to the managers/owners of the selected Brunei businesses. The companies that fell into the sample frame were first contacted through telephone calls and emails, in order to get their agreement to participate in the survey. During the meetings, the purpose of the inquiry was explained and a questionnaire left for completion. The questionnaire was collected once completed. The benefits of this method are that it ensures a high rate of response and permits the respondents to ask any necessary questions (Oppenheim, 1992). Furthermore, the researcher does not incur any additional costs such as travelling and accommodation, due to the close proximity of businesses in Brunei. Nevertheless, only 62 of the sample responded.

Data Analysis: Questionnaire

The research used statistical software (SPSS) to analyze the data collected from the respondents. Both descriptive and statistical analysis was conducted. SPSS v16 was used to analyze the data gathered from the questionnaires. Below are some of the analyses performed on the data collected:

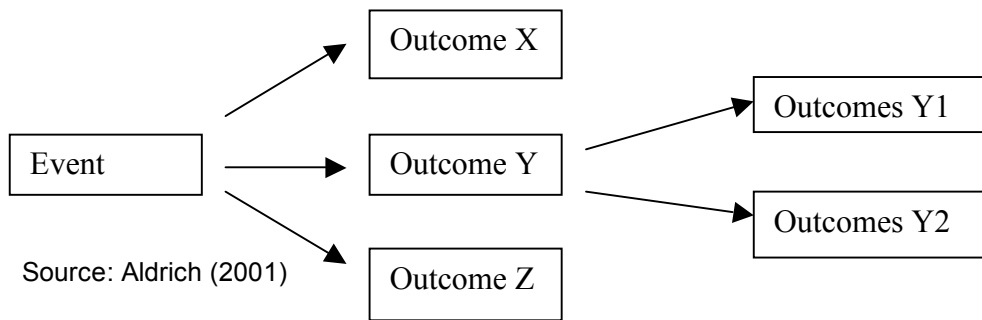
1. Descriptive of the statistics- Frequency, Mode, Mean, Median, etc
2. Factor Analysis to for all variables
3. Cluster Analysis for the types of performance measurement systems
4. ANOVA
5. Multiple regression analysis

Data from sections 1, 2 and 3 of the questionnaire informed the explanation of and justification for the above types of analysis. The first two sections provided a snapshot of each respondent and the nature of their organization, including size and field of operation. Section 3 looked at current practices in performance measurement and the analysis of the responses allowed the researcher to classify the levels of PMS adoption of the respondent companies in relation to the best practices identified in Chapter 2, the literature review. The data collected from Section 4 provided information on the perceived influencing factors on the practice of performance measurement. Rather than offering a freeze-frame of the company and its system, the data collected here relates to ongoing events and issues and, for this reason, the discussion of this data is included in the section on needs and opportunities for future research.

3.5.2 Phase 2: Semi-Structured Interviews

For Phase 2 of this research, interviews enabled the researcher to delve deeper in explaining the 'how' and 'why' of events and changes over a period of time. The information collected will answer the second research question. Figure 14 below shows what this epistemological standpoint of 'event-driven' explanation looks like:

Figure 14. Intensive Approach



According to Robson (2005), it is appropriate to use interviews if the researcher wants to find out what the subjects think, feel and believe. There are three common structures of interview: fully structured, semi-structured and unstructured. The method of data collection used for this study will be through semi-structured interviews. Pre-determined questions for the interview can be developed further during the interview process.

In order to explain how things work and change, this method mostly uses a participatory approach involving techniques such as action research, interviews and ethnography in the research design. Sayer (1994) also mentions the use of structural and causal analysis in this approach.

The advantage of intensive research design is the inherent ability for the researcher to communicate with the subjects, something which is unique to this approach. This feature opens up so many questions, answers and issues relating to the research questions. It does not restrict the researcher and subjects to a pre-designed questionnaire as in the case of extensive research design. Intensive research design allows for two-way communication between the researcher and the subject, enabling the researcher to understand the interviewees' characteristics. In the process, the researcher learns more from these characteristics, such as the way subjects answer a question or the reasons why they disagree with certain ideas brought forward by the researcher.

Documentary Data

Multiple data collection methods in case studies are recommended by some researchers, for example Eisenhardt, (1989) as this provides triangulation of data. There are many types of

documentary data that can be used for the research. These can either be primary or secondary and, in this research, the latter type was chosen to increase knowledge of the case companies. The secondary data itself can be gathered either internally or externally. In this research both methods were employed. For example, the 'Brunei Reports 2007 and 2008' were useful for obtaining additional information with regard to the case companies. At the same time, internal secondary data was gathered from the interviewees. Some documents, such as their workflows and financial reports, were photocopied for the researcher's own use.

Interview Instrument

The instrument used for this phase was a semi-structured interview, which followed the protocol for asking questions and recording responses recommend by Creswell (2009). Interviews were conducted in English as this is the language of communication in each of the four companies. The opening questions focused on the background of the company, the background of the interviewee and the structure of the company in order to acquire a general overview of the organization. Such questions are useful in the opening stages of an interview as they cover familiar topics which the interviewees can respond to easily. This puts them at ease in the interview situation and makes them more willing to open up on the more subjective questions that follow.

The second part of the interview specifically focused on their current key performance indicators. Questions about the development of their performance indicators and the current operation of the system were guided by the 'best practices' framework which resulted from the literature review and was used in the questionnaire designed for the first phase of this study.

The third part of the interview then solicited information about the problems they have encountered in adopting their performance measurement system. This then led to other issues that the interviewees wanted to share. The semi-structured interview questions are attached in Appendix 6. This type of questioning allows for many and varied responses and, as is illustrated later in the section dealing with interview procedure, also permits rephrasing if that proves necessary.

In respect of the first variable, Porter's generic strategies of organizational strategy were adopted in the research. Garengo & Bititci (2007) used this generic tool in their investigation of the relationship between organizational strategy and PMS adoption in manufacturing sector SME in Scotland. This generic typology takes into account the market scope and market strength dimensions of an organization in selecting the appropriate strategy and thus the appropriate performance measures. In addition, stakeholder analysis was also included

in to investigate whether the requirements of stakeholders such as employees, customers and regulators are taken into consideration by SME in their strategic planning.

A further variable identified in Chapter 2 was that of the corporate governance of an organization. In the investigation of the links between the corporate governance structure of the firms under study here and the design and use of performance measurement systems, this research will refer to the work of Gubitta & Gianecchini (2002) and Garengo & Bititci (2007) and Ong & Teh (2008).

Analysis of organization culture enables us to understand how it affects the design and use of performance measurement systems. Implementation of a system is part of a change management initiative that will affect the way the members of an organization perform their tasks. However, these changes may not be compatible with the existing organization culture. This research will adopt Harrison's (1987) typology of organizational culture in evaluating the current culture of the case study organizations as well as the work of Garengo & Bititci (2007).

In analyzing the effect of management style on the adoption of performance measurement systems, this research will use Garengo & Bititci's (2007) typology of management style. This research also adopts the dimensions of information technology from the above-cited work, which are: 'funds invested on information technology (capital and technical expertise)' and 'members' attitude towards the information produced'.

The literature suggests that analysis of human capital will enable us to understand the inter-relationship between the human resource and the effectiveness of a performance measurement system. The analysis of this factor employs Wahab's (2004) four dimensions of human capital: work experience, education level, external support and training.

Sample Frame: Semi-Structured Interviews

The literature indicated various methods of data sampling for qualitative research. Baker (1998) gave a number of common non-probabilistic sampling methods as shown in Table 11.

Table 11. Different Methods of Sampling

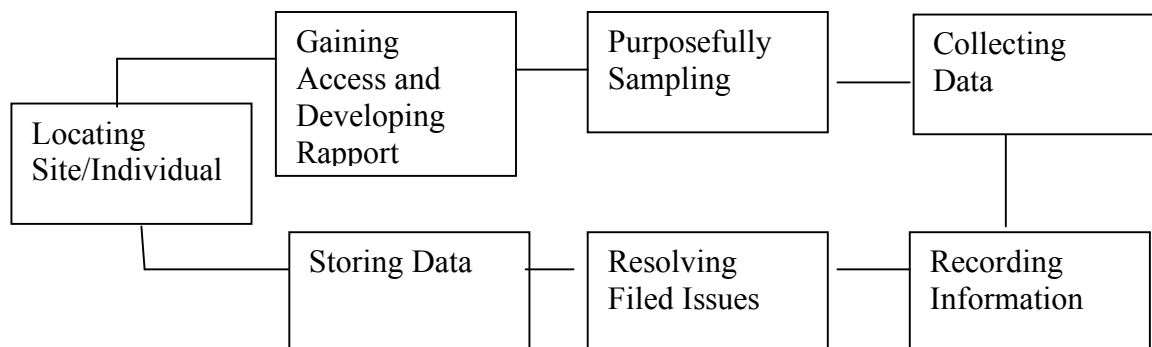
Types	Definition
Convenience Sampling	Choosing an available sample that might be able to offer answers of interest to the study
Purposive Sampling / Judgmental Sampling	Choosing a sample that seems to meet the study requirements
Quota Sampling	Setting an equal weighting for the sub-samples from defined groups
Snowball Sampling	Samples are not chosen but emerge from recommendations from previous subjects.

Source: Baker (1998)

This research adopted both purposive and convenience sampling in contacting the sample available in order to conduct the interviews. To ensure easy access to the service SME in Brunei Darussalam, the researcher used knowledge of the existing network, guided by the achievement of the samples so far such as international, regional or national recognition and awards, ratings and length of business existence in their respective industries. The number of cases selected, therefore, was restricted to those SME considered easily accessible and which involved the lowest amounts of time and cost in collecting the data (Van der Ven, 2007:212). These companies are classified as service-related businesses with employees of fewer than 100. The four case study companies were selected also based on the achievements of the company or the management in getting recognition within their industry, thus fulfilling the criterion of purposive selection (Ritchie and Lewis, 2006). Two of the case companies have Managing Directors who have received entrepreneurial awards; one company received a high 'Fitch Rating' and the other is the first IT firm to have received government IT certification. The four SME were selected based on the conviction that each could aid the understanding of the particular area of interest. This will enable the researcher to answer the second research question.

Data collection will go through various stages of activity, as suggested by Creswell (1997).

Figure 15. The Data Collection Process



Source: Creswell (1997)

As seen in the figure above, the most important part of this research will be gaining access to the cases that are being studied. The first rational step will be to make informal contact with the organization in order to know if they are willing to get involved or not. Additionally, there are some issues that need to be considered in obtaining the consent of the participants involved in the case studies. According to Creswell (1997), issues such as *'the right to withdraw from the study by the participant, the purpose of the study and the way data is to be collected, issues of confidentiality of the subjects, indication of risks that the participant might get involved with in participating in the study and the benefit that the participants are going to get as a result of the study all need to be indicated in the consent letter'*. Thus, it is the task of the researcher to acquire the approval of the SME involved before any formal interviews can be conducted in order to safeguard both the researcher and the participants.

Conducting Interviews

The main stage of data collection was completed within four months from April to July 2010. Various stages of interviews were conducted as follows:

Initial contact with the company's Managing Director: The case companies were firstly identified through the researcher's own networking and the suitability of the company to answer this research question. Emails were sent to their respective administrations in order to obtain details of the Managing Director before a formal letter was sent. The Administration Departments then relayed the information to their M.D.s, together with notice of the intention to use their organization as a research case study. A formal letter was then sent to all four case companies and positive replies were received. (See Appendix 3 for a copy of the formal letter).

Agreement on the Schedule of the Interviews: After receiving the formal agreement letter from each Managing Director, the researcher then contacted the point of contact nominated within each organization to arrange the first interview in Brunei. Despite agreement to participate in the study, the process of agreeing an exact date and time for the initial meeting with all four companies took nearly a month. The researcher returned to Brunei to conduct the initial interviews with the Managing Directors, after which the next set of interviews with the management teams was organized (see Appendix 4 for the interview schedule).

Interview Meetings: The interviews started with the researcher introducing himself and outlining the aims of the interview. All parties agreed to the recording of the interviews on an MP3 player once informed that all of information was confidential. In addition, the researcher also took notes as assurance against failures in the digital recording process. The purpose of the interview questions was to understand the company's current performance measurement system and how the managers perceived it. These questions appear in section C of appendix 6. They were also asked about the factors that had

influenced the adoption of their system. Section D of Appendix 6 aimed to capture this information. The interview questions were used as a guide for the researcher to gather the necessary information previously mentioned. It should be noted that due to the different levels of role and responsibilities of the interviewees in the development of their PMS, the researcher focused on their area of expertise, even though the same questions were used. The researcher had to use different ways of delivering the questions to the interviewees depending on their level of understanding. For some interviewees subject-specific terms such as 'performance measurement system' or 'corporate governance' were not immediately understood so the researcher had to explain or provide examples before they were able to respond. In total, twenty-nine (29) people holding either managerial and/or senior post participated in the interviews. The average length of time of each interview was between one and two hours.

Data Analysis: Interview Materials

Voss *et al.* (2002) stated that the first step after the data collection process is documentation of the data. It is important that the collected data be written up in detail. According to the authors, documentation includes the typing of notes, transcription of tapes and gathering of all documents and materials collected during the fieldwork. It also includes the documentation of ideas and insights by the researcher during the fieldwork. There are various computer programs available to aid the analysis of qualitative data. The most popular software packages currently being use are NUD*IST, Nvivo and AtlesTi (Lacey and Luff, 2001). However, for this research, Nvivo (V.8) was used to organize and analyze the data. Coding was done using the software. Nvivo enables the researcher to classify the replies of the interviewees into different themes. The conceptual framework that was developed in Chapter 2 was used to cluster the different concepts and terms used by the interviewees.

Data collected or observed during the fieldwork were coded. Coding is central to the case research (Voss *et al.*, 2002). There are three steps in coding, specifically, open-coding, axial coding and selective coding. These steps are explained below:

1. Open coding (data fragmenting) – 'an analytic process by which concepts are identified and are developed in terms of their properties and dimensions' (Voss, *et al.*, 2002:212);
2. Axial coding (regrouping) – 'to regroup and link categories into each other in a rational manner' (Voss, *et al.*, 2002:212); and
3. Selective coding (categorizing) – 'selecting a core category and relating it to other categories' (Voss *et al.*, 2002:212).

Following Yin's (1994) prescriptions, individual cases were compiled before cross-case comparisons were made. Drawing conclusions from case study research is a difficult

process, so the approach adopted was based on Miles and Huberman's (1994) view of qualitative analysis. Chapter 5 of this research illustrates this process and focuses on three phases:

- (1) data reduction
- (2) data display
- (3) conclusion drawing and verification.

3.6 Testing the quality of the research Design

Reliability and Construct Validity

The consistency of the measuring instrument of the construct will ensure its reliability. Reliability is expressed in term of correlation coefficient. Oppenheim (1992) recommended the use of Cronbach's Alpha coefficient in order to further enhance the reliability of the measurement. This was used to test the reliability and construct validity for the survey questionnaire (see Table 19 in Chapter 4).

Oppenheim (1992) discusses different types of measurement validity. Content validity is one of the most important aspects in the case of attitude scaling. It states that the items or questions which measure the construct must have balanced samples. Thus, the more items of the construct the more reliable the total score is (Oppenheim 1992). Given the sufficient number of items used to measure the construct in our questionnaire, it fulfills content validity.

In term of data gathered through the interviews, careful consideration was given to fulfilling procedural reliability. Here, interviews were taped and transcribed. The transcribed data was entered into Nvivo (V.8) in order to properly organize it. The coding steps outlined by Voss *et al.* (2002) were properly adhered to.

Multiple sources of evidence were used to ensure construct validity as recommended by Yin (1994). In this study, the interview data was compared with secondary data, such as the official minutes of meetings, workflows, financial reports as well as the external secondary data from the 'Brunei Report' and 'Fitch Rating' website (Flick, 1998).

Internal Validity

To test the internal consistency of the items in the survey questionnaires, correlation coefficients were conducted and the results are shown in the following chapter. According to Yin (1994), internal validity can be fulfilled by establishing causal relationships and the identification of factors that lead to changes in outcomes. To fulfill internal validity of the case studies, the analysis indicated various relationships amongst the constructs. Ripple effect analysis was conducted in order to investigate the relationship between the constructs on the adoption of PMS. Chapter 5 illustrates this process.

3.7 Research Ethics

In order to fulfill ethical guidelines in the conduct of this research, the researcher sent the 'Consent form for Participants Taking Part in Student Research Project' to the case companies for them to sign as an indication of their agreement (see Appendix 8). An application for ethical approval was also obtained from the university in order to get the clearance letter to start the fieldwork (see Appendix 9). Besides that, the researcher consulted ethical guidelines and an information sheet on conducting research that involves human participants (see Appendix 10 and 11). Before the commencement of the interviews, some case companies required the researcher to sign a non-disclosure agreement.

3.8 Summary of the Research Design

The research design used in this study is illustrated in Figure 16. The figure illustrates the steps taken in conducting this research.

The first step includes an extensive literature review of areas related to this research. From this, the theoretical framework of the influencing factors of the design and use of performance measurement systems for service SME was identified. This step also included the development of measurement instruments based on the literature review and the researcher's own interpretations.

The second step of this research was to conduct a pilot study on the survey questionnaires. The purpose of the pilot study was to test the instruments and the internal validity of the questionnaires. In fact, two pilot studies were conducted on the survey questionnaires.

The third step involved data gathering; conducting the actual fieldwork on the survey questionnaires. This was carried out in Brunei Darussalam, the main focus of the research. Data analysis and interpretation on the survey questionnaires provided direction for the second phase of the research. The findings from the first phase of the study were used to assist the development of the interview questions for the case studies.

The second phase of this study was to perform data gathering via interviews with managers or owners of service SME in Brunei Darussalam. Interpretation of the semi-structured interviews was used to support the research findings in the first phase. The final step was the discussion and conclusion of both phases of the studies.

The objectives of the sequential mixed method of quantitative and qualitative approaches are:

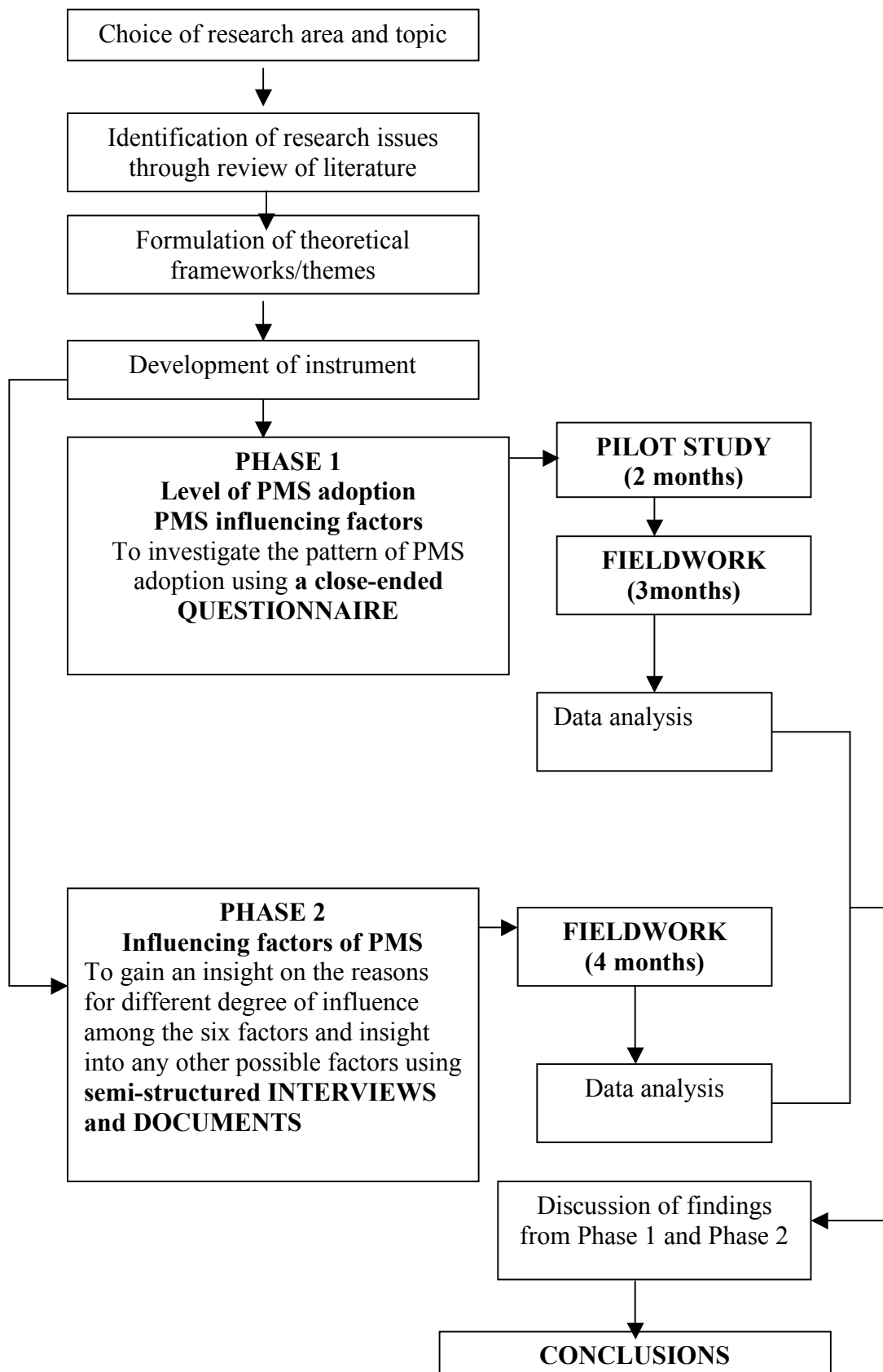
1. To formulate a model of influencing factors for SME in the service sector.
2. To support and extend the findings in phase 1.

The research model (Figure 15) used to investigate the influencing factors was developed based mainly on the previous empirical findings on manufacturing SME. The second phase of the research, the interviews, aimed to explore the existence of other driving or impeding factors that might affect the adoption of performance measurement systems, specifically in the SME service sector. The interviews were also aimed at gaining further in-depth insight to explain the reasons behind each of the influencing factors from the perspective of service SME, in comparison with the empirical evidence from previous literature on manufacturing SME.

3.9 Chapter Conclusion

This chapter demonstrates the ontological and epistemological stance of this research. Based on this, mixed methods of data collection were used in order to obtain sufficient depth and breadth of information to answer the two research questions. This chapter also describes the research instruments, sources of data and data analysis methods used in this research. It demonstrates that all necessary measures to verify the reliability of the data have been employed and indicates the problems that had to be overcome in the research process. Chapter 4 describes the findings from the quantitative research – the survey questionnaire. This information will be used to answer the first research question on the level of adoption of PMS. Chapter 5 presents the findings from the qualitative research – the face-to-face interviews, which will be used to answer the second research question of which factors influence PMS adoption in service sector SME in Brunei.

Figure 16. An overview of the research design



Chapter 4:

Findings - Quantitative Data Collection

4.1 Introduction

This chapter will answer the first research question of this paper. Quantitative data collected from the survey distributed among the service sector SME in Brunei Darussalam were analyzed and the findings were presented. Firstly, the analysis used to answer the research questions were explained and justified. The background of the samples was presented using descriptive statistics in order to give an overview of the demographic distribution of the samples and the relationship of variables investigated in this research. To answer the research question, we run cluster analysis and conduct one-way ANOVA for groups and multiple-regression on the dependent variables.

4.2 Data Analysis

This section outlines the procedures for data analysis to provide indications for the research questions. The first section outlines the approach taken to the analysis of the data and justifies the selection of cluster analysis, one-way analysis on variances (ANOVA) and multiple-regression used in this research. The second section explains the procedures taken to screen the data for errors and for missing value before further analysis was conducted. The next section assesses both uni-dimensionality and the construct validity of the different variables of interest in this study. In the final section, the results of the analysis are reported.

Types of and justification for the analysis of the research

We use the Statistical Package for Social Science SPSS (v.16) to explore descriptive statistics, determine factor structures of the various variables, run cluster analysis and conduct one-way ANOVA for groups and multiple-regression on the dependent variables.

The research problem was concerned with the internal organizational factors that influence the development of performance measurement systems. Organizational factors that were investigated include organizational culture, management style, corporate governance, human capital, organization strategy and information technology and these were proposed as independent variables.

Analysis of the collected data was carried out in three stages: (i) Cluster Analysis, to investigate the current development level of PMS in the context of Brunei's service sector SME; (ii) ANOVA, to investigate if differences exist amongst the clusters in relation to the

internal organizational factors; and (iii) Multiple-Regression Analysis, to investigate which internal organizational factor(s) significantly influence the development of PMS.

a. Cluster Analysis

Cluster analysis is used to develop meaningful mutually exclusive subgroups of individuals or objects based on similarities. It will result in the creation a number of groups or clusters (Hair *et al.*, 1998). There are various steps to cluster analysis. The first is measuring the similarities or association among the cases to identify groups within the sample. Then, the cases will be assigned and grouped together in accordance with their similarities. The final step is to identify the characteristics of the variables of each groups or clusters (Hair *et al.*, 1998).

b. One-way ANOVA

ANOVA is used to test differences in the means of several groups (Field, 2005; Hair *et al.*, 1998). One-way analysis of variance involves one independent variable with more than two groups of dependent variables. To avoid Type 1 error, a Post-Hoc test is recommended.

c. Multiple-Regression

This technique can be used to predict one dependent variable from several independent variables (Hair *et al.*, 1998; Pallant, 2001). The coefficient of determination will indicate the percentage of dependent variable that can be predicted by the independent variables.

Summary: Method of data analysis

Table 12 summarizes the method of analyzing the data to provide indications for the research questions. Cluster analysis was used to group together case companies into most similar and dissimilar attributes based on the types of performance measures, bases of measuring performance; purpose of measurement; accountability of the measurement system; flexibility of the measurement system and the integration of the performance system into the whole organization. This will help to answer RQ1 which is concerned with the level of development of performance measurement systems in the service sector SME in Brunei.

RQ1-A is concerned with investigating the impact of an organization's internal resources on the different development levels of the performance measurement system indicated in RQ1. Consequently, one-way ANOVA was used to test whether differences exist between different clusters of PMS development level in relation to their internal organizational resources. Regression analysis was used to answer RQ1-B, which investigates the statistical contribution of the independent variables (internal organizational resources) i.e. corporate governance, management style, human capital, organization culture, organization strategy and information technology to the development of the performance measurement system.

Table 12: Research questions and method of analysis employed

Research questions	Method of analysis
RQ1: What is the current level of PMS adoption in Brunei Service SME?	<i>Cluster Analysis</i> Variables in analysis: Performance Measures Dimensions Performance Measures Bases of Selection Performance Measures Purpose Performance Measurement System Flexibility Performance Measurement System Accountability Performance Measurement System Integration
RQ1 - A: If the development of PMS is affected by the organization's internal resources, are there any differences in the influence of these resources among the different development level of PMS?	<i>One-Way ANOVA</i> Variables in analysis: Dependent: Corporate Governance Strategic Involvement; Corporate Governance Operational Involvement; Human Capital Support Agency; Human Capital Management Training; Management Style - Flexibility and Adaptability; Management Style - Rules and Regulations; Organizational Culture – Team and Respect for People; Organizational Culture – Rule Oriented; Organizational Culture – Competitive and Aggressiveness; Organizational Strategy – Cost and Market Leadership; Organizational Strategy – Customer Service Orientation; Organizational Strategy – Focus Product Differentiation; Information Technology Usefulness; Information Technology Complexity; Information Technology Investment Level. Factors: Cluster 1, Cluster 2 and Cluster 3
RQ1 - B: How well do the organization's internal resources predict the development of PMS? How much variance in PMS can be explained by each of the internal resources?	<i>Multiple Regression</i> Variables in analysis: Dependent: PMS Independent: Corporate Governance Strategic Involvement; Corporate Governance Operational Involvement; Human Capital Support Agency; Human Capital Management Training; Management Style - Flexibility and Adaptability; Management Style - Rules and Regulations; Organizational Culture – Team and Respect for People; Organizational Culture – Rule Oriented; Organizational Culture – Competitive and Aggressiveness; Organizational Strategy – Cost and Market Leadership; Organizational Strategy – Customer Service Orientation; Organizational Strategy – Focus Product Differentiation; Information Technology Usefulness; Information Technology Complexity; Information Technology Investment Level.

Data Screening and Missing Values

Data screening is necessary before testing the main research questions. Several assessments were conducted in this study such as normality testing, treating missing values, estimating a reliability test and conducting exploratory factor analysis. This is discussed in turn.

Data was examined using frequency distributions, descriptive statistics and graphs to identify any imputation errors which could cause distortion of the analysis. When error was detected, we referred back to the particular original questionnaire to fix the coding error. Then we examined for the presence of missing data. It is important to deal with missing values as incomplete data may lead to serious bias in the conclusions.

a. Treating Missing Values

Some of the common treatments of missing value are by list-wise deletion, pair-wise deletion, mean imputation, regression imputation and multiple imputation, each with its own advantages and disadvantages (Byrne, 2001; Hardy and Bryman, 2004).

Sixty-two valid questionnaires were collected in which participants rated metric variables pertaining to the independent and dependent variables. There were four missing values in sections one and two, thirty-three missing values in section three and one hundred and thirty five missing values in section four. A missing value analysis was conducted by comparing the observations of those variables with missing values (Group 1) from those without missing value (Group 2) if a particular variable posed a problem in the dataset. Group 2 was gathered by deleting any case with incomplete data (list-wise deletion), resulting in forty-four cases.

Appendix 12 displays the different observed variables and mean scores in Groups 1 and 2. Screenings on individual variables suggested no item was particularly problematic. Comparison of the means scores of all individual items was made between Group 1 and Group 2 (listwise) to see the means differences. The results revealed that the mean differences between the groups were small. No T-test was conducted as there are no variables with missing values of 5 per cent or more.

With a cleansed dataset the data was further tested for normality prior to the conduct of the cluster analysis, one-way ANOVA and multiple-regression analysis. Then, exploratory factor analysis was conducted to explore how well the scales measured the underlying variables (uni-dimensionality) and to make an assessment of the construct validity. Scale reliability tests were used on each of the constructs to test the construct reliability (Cronbach Alpha). Further analysis on the detection of outliers and homogeneity of variances was carried out during the cluster, variances and multiple regression analyses, as they require specific assumptions to be checked prior to running the analyses.

b. Normal Distribution Test

Normality tests on the variables of skew and kurtosis were conducted as well as a Kolmogorov-Smirnov test. Almost all of the variables were negatively skewed with a *P* value of less than 0.05 on the Kolmogorov-Smirnov test. Logarithm transformation was used on the whole scale data which was tested again for normal distribution. The transformation did not improve the normal distribution of the variables. This might be due to the 5-point Likert-scale used in this research. The normality of the data might be improved if the scale was made broad so it was decided to use the original data in the further analysis in this research.

c. Assessment of uni-dimensionality and construct validity

This section outlines the procedure used to assess how well the items on a scale measure a construct. Garver and Mentzer (1999) suggested that construct validity should possess both uni-dimensionality and scale reliability. Once these items undergone the testing, it is then acceptable to perform the necessary analysis and the results of the analysis should be interpretable (Carifio and Perla, 2007). To assess uni-dimensionality of variables, this research made use of principal component analysis. This statistical procedure of exploratory factor analysis and construct validity is explained below.

i. Factor Analysis

The number of factors to be extracted in this research was guided by both a priori criterion and Kaiser's criterion. Where the researcher knew how many desired factors were to be extracted through replication of another researcher's work, the a priori criterion was used (Hair et al, 1998). Meanwhile, Kaiser's criterion was used for the rest of the variables. In Kaiser's criterion, factors within an eigenvalue of greater than 1 are considered significant.

Three steps were involved in conducting the factor analysis following Pallant (2001):

1. Assessment of the suitability of the data for factor analysis – by looking at sample size and strength of inter-correlations among items (KMO)
2. Factor extraction – by determining the smallest number of factors that can be used to best represent the interrelations among the set of variables. There are various available extraction techniques but this research used the more conservative 'Principal Factors'.
3. Factor rotation and interpretation – from the two main approaches to rotation, resulting in either orthogonal or oblique factor solutions, orthogonal (varimax) rotation was selected for this research. Varimax rotation was conducted to determine the variables that load on a particular variable.

ii. Scale Reliability

This measures the consistency of a scale in measuring latent variables. It comprises indicators that measure a single uni-dimensional variable that vary together statistically (Churchill and Peter, 1984). In this research, reliability tests were conducted on all the variables.

4.3 Descriptive Results

This section reports descriptive results of the study that consist of characteristics of the sample and relationships among variables investigated in this study.

Company Background: Type of Service Sector

The respondent companies came from small and medium-sized enterprises (SME) specifically falling into the category of service industries. Twelve types of service provision were classified. The number of respondents for each of the twelve types is shown as in Table 13.

Table 13: Respondent companies by type of service sector		
Type of Sector	Frequency	Percentage
Import and export representative	4	6.5
Retail	13	21.0
Hotel and Travel	5	8.1
Food and Beverages	5	8.1
Packaging Services	1	1.6
Financial Institution	1	1.6
Professional services	13	21.0
Engineering	8	12.9
Education services	4	6.5
Health services	2	3.2
Maintenance and repairs services	2	3.2
Personal care services	4	6.5
Total	62	100.0

Size of Company (Number of Employees)

Of the sixty-two companies, 51.6 per cent of them employed fewer than eleven employees and the rest employed eleven to fifty employees. However, only 6.5 per cent of the total respondents employed more than 51 employees.

Table 14: Number of Employees		
Number of Employees	Frequency	Percentage
1 to 5	16	25.8
6 to 10	16	25.8
11 to 20	17	27.4
21 to 50	9	14.5
51 to 100	4	6.5
Total	62	100.0

Years of Operation

Nearly 50 per cent of the respondents have been in operation less than 11 years. Only 9.7 per cent of the respondents have been in operation for more than 16 but less than 20 years. Meanwhile, 29 per cent of the respondents have been in operation for more than 20 years.

Table 15: Years of Operation

Years	Frequency	Percentage
Less than 6 years	13	21.0
6 to 10 years	17	27.4
11 to 15 years	8	12.9
16 to 20 years	6	9.7
More than 20 years	18	29.0
Total	62	100.0

Ownership

Of the 62 respondents, 49 were locally owned, which represents 79 per cent of the total. Only 6.5 per cent of the respondents have joint ownership with a foreign company. Meanwhile, only 3 of the respondents are 100 per cent foreign-owned.

Table 16: Ownership of Company

Ownership	Frequency	Percentage
Locally-owned	49	79.0
Joint venture (Foreign and Local)	4	6.5
Foreign-owned subsidiary	3	4.8
Corporate ownership	5	8.1
Semi-government	1	1.6
Total	62	100.0

Personal Background of the Respondents

56.5 per cent of the 62 respondents were male while 43.5 per cent were female. The majority (66.1 per cent or 41 number) of respondents were aged more than 40 years old. 56.5 per cent (35) of them were themselves both owner and manager of the company and 62.9 per cent (39) of the respondents have legal ownership of the company. Most of the respondents (67.2 per cent) have at least a diploma level of education. The details of the respondents are shown in Table 17.

Table 17. Demographic Profile of Respondents

Demographic category	Number	Percentage
Gender		
Male	35	56.5
Female	27	43.5
Age		
20 – 29	4	6.5
30 – 39	17	27.4
40 – 49	22	35.5
More than 50 years old	19	30.6
High Level of Education		
Primary certificate	1	1.6
Secondary certificate	6	9.8
College diploma or certificate	13	21.3
Undergraduate degree	20	32.8
Master degree	11	18
Doctorate/Professional qualification	10	16.4
Relationship with company		
Owner and a Manager	35	57.4
Manager, but not an Owner	24	39.3
Owner, but not a Manager	2	3.3
Professional Background		
Accounting/Finance	9	15
Sales/Marketing	9	15
Information Systems	7	11.7
Operations	3	5
Technical/Engineering	9	15
Administration/Management	17	28.3
Others	6	10

In terms of the professional background of the respondents, 85 per cent of them were from non-financial backgrounds such as operations, administration, technical, sales and information systems. Only 15 per cent of them were from accounting or financial backgrounds. Table 18 illustrates this distribution.

Table 18: Professional Background

Professional Background	Frequency	Percentage
Accounting/Finance	9	14.5
Sales/Marketing	9	14.5
Information Systems	7	11.3
Operations	3	4.8
Technical/Engineering	9	14.5
Administration/Management	17	27.4
Others	6	9.7
Missing	2	2
Total	62	100

The Reliability Scales

Scale reliability tests were conducted on all constructs to be measured in order to satisfy their internal consistency. The Cronbach's alpha coefficients of all variables were above 0.7, which indicates good internal consistency (Pallant, 2001; Hair *et al.*, 2006; DeVellis, 2003). This is indicated in Table 19.

Exploratory Factor Analysis

The literature warns of the need to treat small sample sizes with caution when applying EFA. Various researchers such as Guiford (1954) in Winter *et al.* (2009) recommended 200 as the minimum sample size but others such as Comrey (1973) in Winter *et al.* (2009) have suggested a range of sample with a minimum sample size of 50 being poor to 1000 being excellent. Tabachnick and Fidell (2007:613) suggested at least 300 as the comforting number of samples. In order to overcome the shortcomings of small sample size, Jung and Lee (2011:707), demonstrated that 'Regularized EFA' could be used. Their findings indicated that this method recovered factor loading parameters better than Maximum Likelihood Factor Analysis (MLFA) or Principal Component Analysis (PCA). Nevertheless, the findings of MacCallum *et al.* (1999) in Winter *et al.* (2009: 148) indicated that there are no thresholds for minimum sample size. Furthermore, their simulations of EFA used a minimum sample size of 60, which their framework indicates as an acceptable sample size. Their findings support our decision to use EFA in our study.

Factor analysis was conducted using Principle Component Analysis. This research used Kaiser's criterion or the eigenvalue rule in the factor analysis. It only maintained those with eigenvalues over 1. The factor suppress absolute value was set at 0.5. KMO and Barlett tests for all variables were more than 0.5, so the use of this analysis was appropriate. The factor analysis output for selected variables is shown in Appendix 13.

Means, Standard Deviations and Correlations

Table 19 present the means (M), standard deviations (SD) and correlations for the scales used in this study. It indicated good dispersion and little evidence of floor or ceiling effects. The patterns of relationships are generally in a positive direction with only few non-significantly correlated. The box plots for both 'Best practices' constructs (Figure 18) and 'Influencing Factors' constructs (Figure 17) indicated few cases as outliers. Outliers such as cases 23 and 24 were identified in organization strategy – focus differentiation, organization strategy – customer service orientation and organizational culture – team and respect for people. Having determined that items were measuring the intended variables and that variables were totally different from each other, the next section discuss the results of the main analysis to determine the level of PMS development in Brunei's service sector SME and the factors that determine this.

Table 19. Descriptive Statistics

Measures	M	SD	1	2	3	4	5	6	7
Performance Measurement Dimensions									
1. Performance Measurement Dimensions	3.90	0.67	(.90)						
2. Performance Measurement Bases (context)	3.71	0.74	.759**	(.96)					
3. Performance Measurement Bases (effectiveness & efficiency)	3.69	0.82	.625**	.641**	(.80)				
4. Performance measurement purpose	4.05	0.66	.625**	.766*	.582**	(.95)			
5. Performance measurement accountability (Responsibilities)	3.45	0.93	.739**	.819**	.489**	.744**	(.94)		
6. Performance measurement accountability (Stakeholders)	3.51	0.99	.506**	.682**	.338**	.690**	.763**	(.91)	
7. Performance measurement system flexibility	3.65	0.95	.413**	.568**	.356**	.621**	.716**	.572**	(.96)
8. Performance measurement system integration	3.41	1.07	.542**	.589**	.297*	.554**	.795**	.596**	.835**
Organizational Context									
9. Corporate Governance - Strategic Involvement	3.89	1.14	.448**	.560**	.328*	.566**	.681**	.589**	.659**
10. Corporate Governance - Operational Involvement	4.03	1.07	.405**	.425**	.302*	.492**	.537**	.483**	.460**
11. Management Style - Flexibility and Adaptability	4.01	0.80	.447**	.554*	.363**	.612**	.639**	.548**	.692**
12. Management Style - Rules and Regulations	4.17	0.74	.427**	.496**	.446**	.490**	.591**	.347**	.493**
13. Organizational Culture – Team and Respect for People	4.24	0.71	.449**	.439**	.168	.419**	.608**	.382**	.451**
14. Organizational Culture – Rule Oriented	4.08	0.81	.471**	.469**	.322*	.461**	.662**	.412**	.508**
15. Organizational Culture – Competitive and Aggressiveness	3.61	0.95	.447**	.514**	.301*	.408**	.669**	.560**	.450**
16. Organizational Strategy – Cost and Market Leadership	3.92	0.80	.432**	.468**	.507**	.451**	.643**	.431**	.421**
17. Organizational Strategy – Customer Service Orientation	4.41	0.66	.410**	.330**	.295*	.417**	.542**	.362**	.398**
18. Organizational Strategy – Focus Product Differentiation	3.81	0.87	.493**	.529**	.263*	.468**	.714**	.562**	.489**
19. Information Technology Usefulness	4.01	0.90	.322*	.341**	.349**	.307*	.460**	.342**	.404**
20. Information Technology Complexity	3.74	0.95	.480**	.495**	.382**	.327*	.618**	.501**	.501**
21. Information Technology Investment Level	3.51	0.87	.592**	.575**	.463**	.501**	.657**	.445**	.573**
22. Human Capital - Support Agency	2.56	1.05	.496**	.490**	.320*	.294*	.582**	.463**	.392**
23. Human Capital - Management Training	2.51	0.99	.405**	.444**	.291*	.382**	.621**	.505**	.481**

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																
2																
3																
4																
5																
6																
7																
8		(.97)														
9	.688**	(.98)														
10	.423**	.649**	(.95)													
11	.569**	.626**	.474**	(.84)												
12	.408**	.435**	.489**	.690**	(.94)											
13	.535**	.551**	.430**	.657**	.668**	(.96)										
14	.594**	.643**	.476**	.595**	.581**	.816**	(.90)									
15	.635**	.482**	.265*	.393**	.443**	.535**	.572**	(.84)								
16	.522*	.530**	.405**	.448*	.568**	.614**	.707**	.747**	(.93)							
17	.437**	.588*	.465**	.531**	.602**	.834**	.793**	.413**	.720**	(.88)						
18	.658**	.663**	.467**	.518**	.479**	.678**	.761**	.749**	.732**	.614**	(.87)					
19	.403**	.472**	.183	.455**	.466**	.592**	.606**	.531**	.438**	.548**	.541**	(.98)				
20	.655**	.485**	.136	.396**	.417**	.431**	.548**	.630**	.583**	.467**	.603**	.733**	(.94)			
21	.552**	.505**	.363**	.550**	.493**	.549**	.622**	.408**	.469**	.461**	.565**	.616**	.739**	(.89)		
22	.484**	.267*	.319*	.256*	.256*	.156	.312*	.359**	.283*	.130	.387**	.290*	.612**	.519**	(.91)	
23	.556**	.256	.182	.323*	.197	.161	.340*	.467**	.345*	.123	.393**	.227	.490**	.476**	.686**	(.95)

Note: The bracketed values are the reliability scales for each respective measure. *p<0.05 (2-tailed), **p<0.01 (2-tailed)

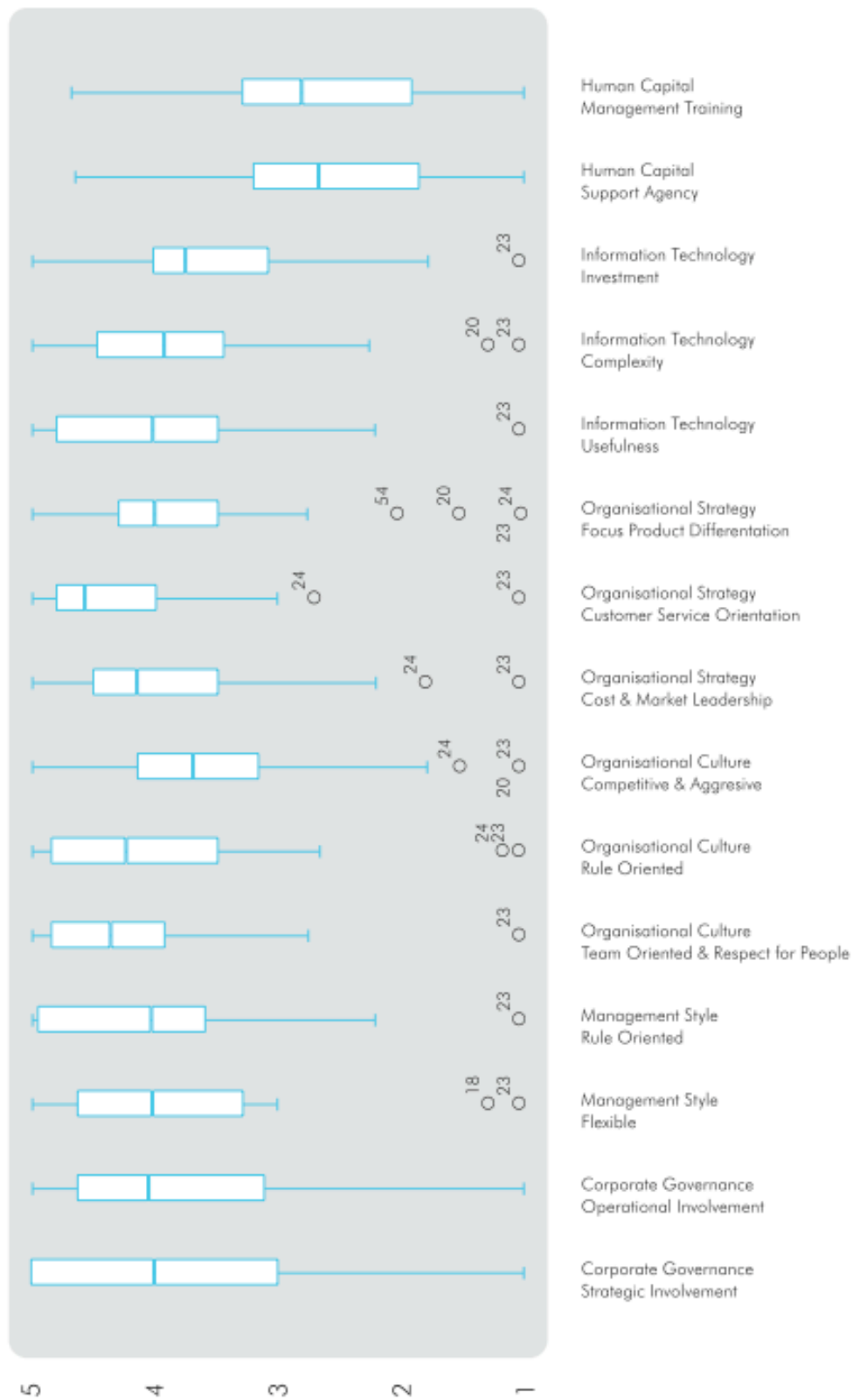


Figure 17. Influencing Factors Variables

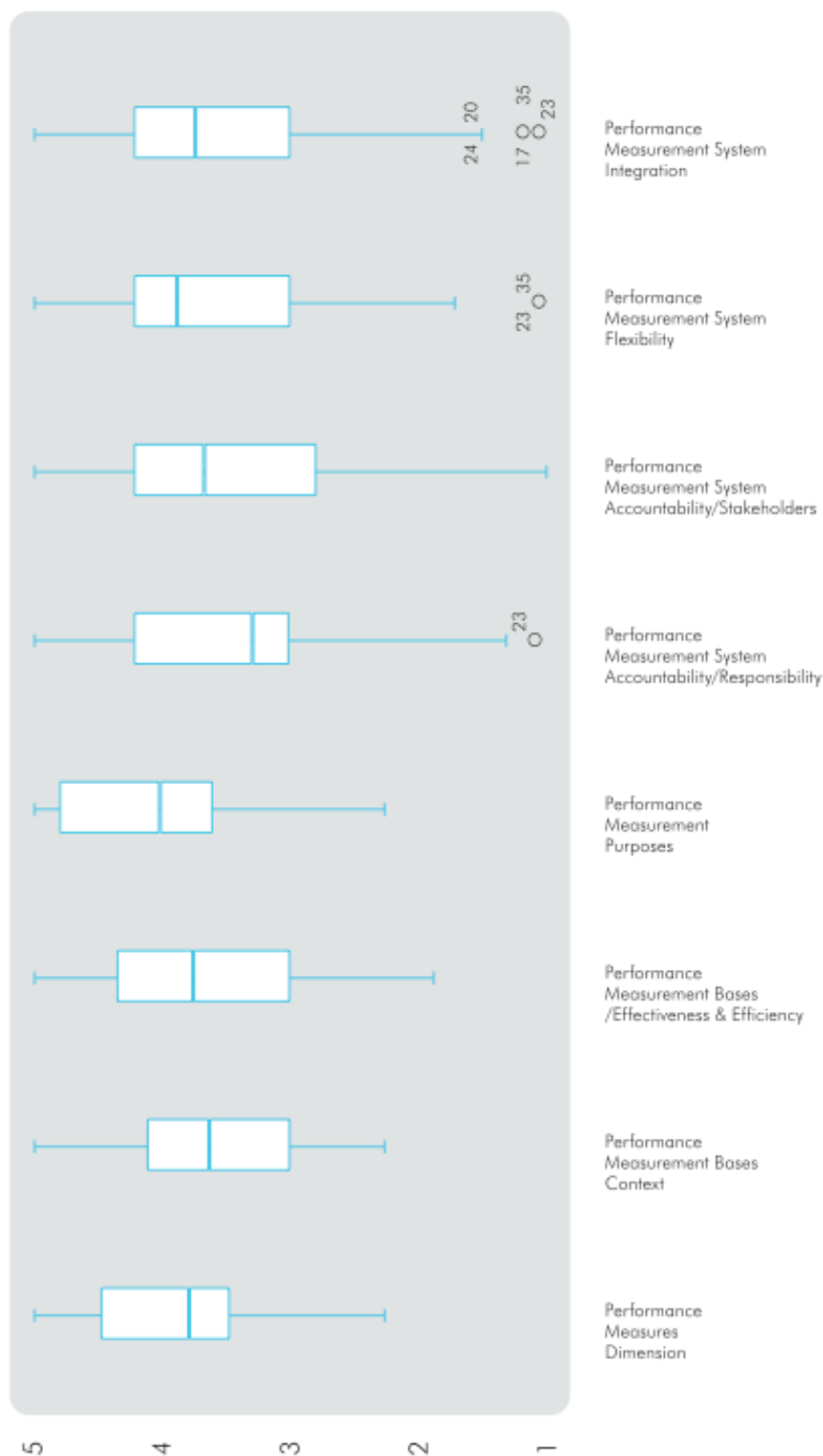


Figure 18. Best Practices

4.4 Cluster Analysis: Research Question 1

The Cluster Analysis attempts to provide some indications for RQ 1 which asked: *What is the current level of PMS adoption in Brunei Service SME?*

The main objective of this analysis was to investigate the current trends in and the development of performance measurement systems among service sector SME in Brunei. Case companies were clustered into three groups based on six best practices of performance measurement that were developed through analysis of the literature on how performance is managed. The six best practices include types of performance measures; bases of measuring performance; purpose of measurement; accountability of the measurement system; flexibility of the measurement system and the integration of the performance system into the whole organization. Cluster analysis was conducted to investigate the extent to which SME were clustered into different categories based on the similarities and differences in their use of the six best practices.

K-Means cluster analysis was opted for in this research because the method appreciates the prior knowledge of the researcher of different categorical levels of PMS development arrived at through study of the previous literature. Although Hierarchical Cluster does not permit the inclusion of cases with missing values and assumes no prior knowledge of the phenomena under study, it was conducted, nevertheless, to check if it would produce the same number of clusters suggested in the literature. Using the complete linkage method (the furthest neighbor) in the hierarchical cluster analysis, the dendrogram produced only 2 clusters (see Figure 18).

In the K-Means cluster analysis, table 20 indicates which variables contribute the most to the cluster solution. Variables with large F values provide the greatest separation between clusters. Based on the F value, the cases were clustered based on high levels of differences in Performance Measurement System Accountability; Performance Measurement System Flexibility and interactive level and Performance Measurement Integration level of the system with other management systems.

Fig 19. Dendrogram Using Ward Method

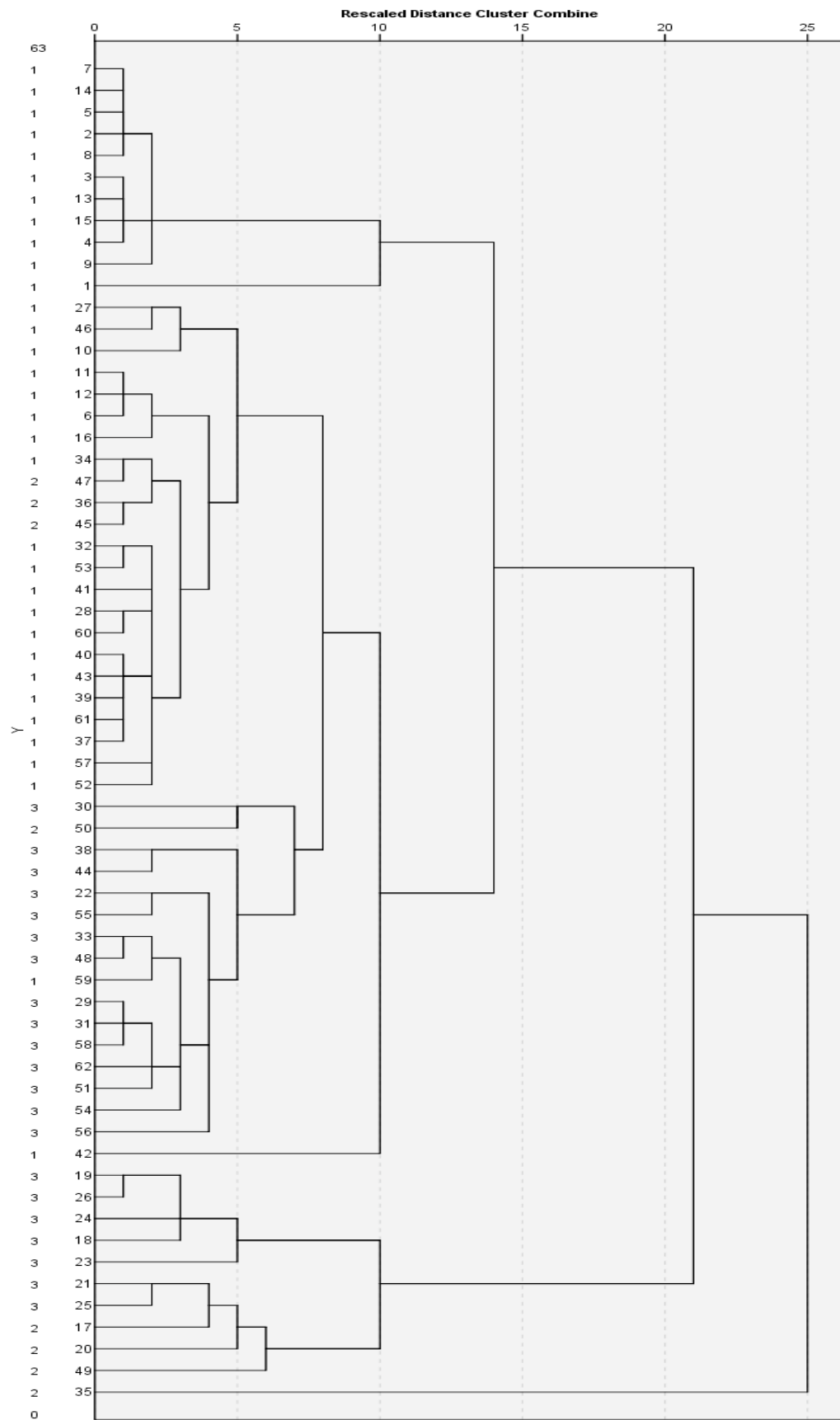


Table 20. Cluster Analysis

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Performance Measure Dimensions	6.149	2	.262	58	23.430	.000
Performance Measures Bases (Context)	5.609	2	.459	57	12.233	.000
Performance Measurement Bases (effectiveness & efficiency)	11.203	2	.278	56	40.282	.000
Performance Measures Purpose	6.016	2	.218	55	27.545	.000
Performance measurement accountability (Responsibilities)	18.138	2	.249	53	72.698	.000
Performance measurement accountability (Stakeholders)	15.409	2	.507	57	30.392	.000
Performance measurement system flexibility	16.026	2	.390	58	41.054	.000
Performance measurement system integration	25.316	2	.298	56	84.927	.000

Based on the analysis, cases were assigned to the three different clusters. There were sixteen (16), ten (10) and thirty-six (36) cases in Cluster 1, Cluster 2 and Cluster 3 respectively. Based on the means of each variable, cluster 1, cluster 2 and cluster 3 could be described as having Advanced, Traditional and Balanced types of PMS respectively.

Table 21. Explanation of Clusters

Best Practices	Means		
	Advanced	Traditional	Balanced
Performance Measure Dimensions	4.61	3.33	3.74
Performance Measures Bases (Context)	4.48	3.30	3.52
Performance Measurement Bases (effectiveness & efficiency)	4.65	2.85	3.48
Performance Measures Purpose	4.75	3.33	3.98
Performance measurement accountability (Responsibilities)	4.58	2.06	3.29
Performance measurement accountability (Stakeholders)	4.49	2.18	3.41
Performance measurement system flexibility	4.63	2.32	3.61
Performance measurement system integration	4.53	1.63	3.39

The general profiles of the three clusters, based on the respondent's personal background and the company background are shown in Table 22. Respondents with accounting and finance backgrounds are more likely to adopt a traditional method of PMS. Companies that have been in operation for more than 20 years are also more likely to adopt a traditional PMS compared with much younger companies.

Table 22: General Profiles of the Three-Cluster Solutions

Items	Advanced PMS	Balanced PMS	Traditional PMS	Total Cases
Relationship with company				
- Owner and Manager	11(69%)	19(53%)	5 (50%)	35
- Manager, but not an Owner	3(19%)	16(44%)	5(50%)	24
- Owner, but not a Manager	1(6%)	1(3%)	-	2
Total Cases				61
Missing				1
Professional Background				
- Accounting/Finance	1(6%)	4(11)	4(40%)	9
- Sales/Marketing	2(13%)	6(17%)	1(10%)	9
- Information Systems	1(6%)	5(14%)	1(10%)	7
- Operations	2(13%)	1(3%)	-	3
- Technical/Engineering	2(13%)	6(17%)	1(10%)	9
- Administration/Management	5(31%)	10(28%)	2(20%)	17
- Others	2(13%)	3(8%)	1(10%)	6
Total Cases				60
Missing				2
Years of Operation				
- Less than 6 years	4(25%)	7(19%)	2(20%)	13
- 6 to 10 years	6(38%)	10(28%)	1(10%)	17
- 11 to 15 years	3(19%)	3(8%)	2(20%)	8
- 16 to 20 years	2(13%)	3(8%)	1(10%)	6
- More than 20 years	1(6%)	13(36%)	4(40%)	18
Total Cases				62
Ownership				
- Locally-owned	14(88%)	27(75%)	8(80%)	49
- Joint venture (Foreign and Local)	1(6%)	3(8%)	1(10%)	5
- Foreign-owned subsidiary	-	2(6%)	-	2
- Corporate ownership	1(6%)	4(11%)	1(10%)	6
Total Cases				62
Number of Employees (Size of Business)				
- 1 to 5	7(44%)	6(17%)	3(30%)	16
- 6 to 10	3(19%)	11(31%)	2(20%)	16
- 11 to 20	4(25%)	11(31%)	2(20%)	17
- 21 to 50	2(13%)	5(14%)	2(20%)	9
- 51 to 100	-	3(8%)	1(10%)	4
Total Cases				62
Type of Business				
- Import and export representative	1(6%)	2(6%)	1(10%)	4
- Retail	4(25%)	6(17%)	3(30%)	13
- Hotel and Travel	2(13%)	3(8%)	-	5
- Food and Beverages	1(6%)	4(11%)	-	5
- Packaging services	-	-	1(10%)	1
- Financial Institution	-	1(3%)	-	1
- Professional services	1(6%)	10(28%)	2(20%)	13
- Engineering	2(13%)	5(14%)	1(10%)	8
- Education services	1(6%)	3(8%)	-	4
- Health services	1(6%)	-	1(10%)	2
- Personal care services	3(19%)	1(3%)	-	4
- Maintenance and repairs services	-	1(3%)	1(10%)	2
Total Cases				62

4.5 ANOVA

The ANOVA analysis attempts to provide some indications for RQ1-A which asked: *If the development of PMS is affected by organization's internal resources, are there any differences in the influence of these resources among the different development levels of PMS?*

The main objective of this analysis was to investigate the influence of corporate governance, human capital, information technology, management style, organization culture and organization strategy on the different development levels of performance measurement systems. ANOVA was conducted to investigate the effect of these internal resources on the development of PMS by making comparisons between traditional (Cluster 2), balanced (Cluster 3) and advance (Cluster 1) PMS.

The independent variables were the type of PMS (traditional, balanced and advanced level) on a linear model made up of corporate governance, human capital, information technology, management style, organizational culture and organization strategy.

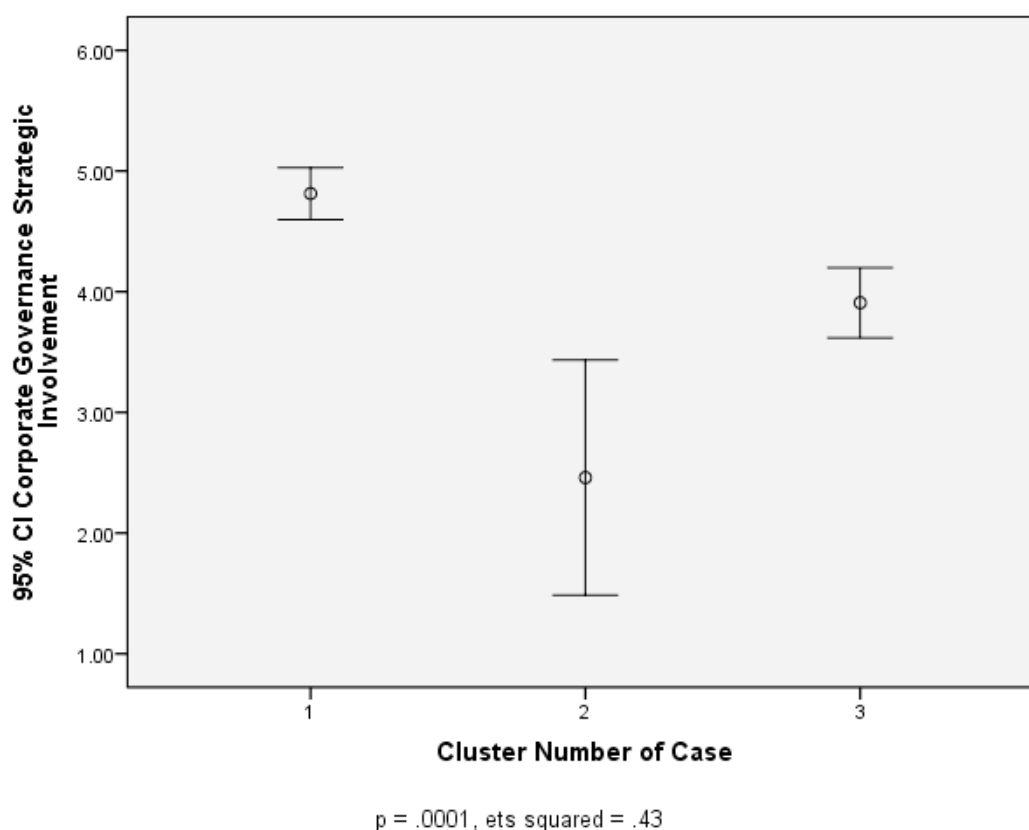
Preliminary checks demonstrated that there were some violations of assumptions of normality and homogeneity. As a result, the output from Welch and Brown-Forsythe was initially preferred. However, this research proceeded with ANOVA as the sample, (N=62), was large enough and it was considered that the analysis was reasonably robust to violations of this assumption (Stevens 1996, p.249; Tabachnick and Fidell, 2007). Post-hoc analyses were also conducted on each analysis to reduce Type 1 error. The result of the ANOVA analysis and its descriptive statistics on each one of the organization's internal resources is reported in Appendix 14.

Corporate Governance - Strategic Involvement:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welch and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of owner's strategic involvement. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the strategic involvement scores for the three PMS clusters: $F(2, 57) = 21.94$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .43 (Cohen 1988, p.22). Post-hoc comparisons using the Tukey HSD test indicated that the

mean score for Cluster 1 ($M = 4.81$, $SD = .39$), Cluster 2 ($M = 2.46$, $SD = 1.36$) and Cluster 3 ($M = 3.91$, $SD = .85$) were significantly different from each other.

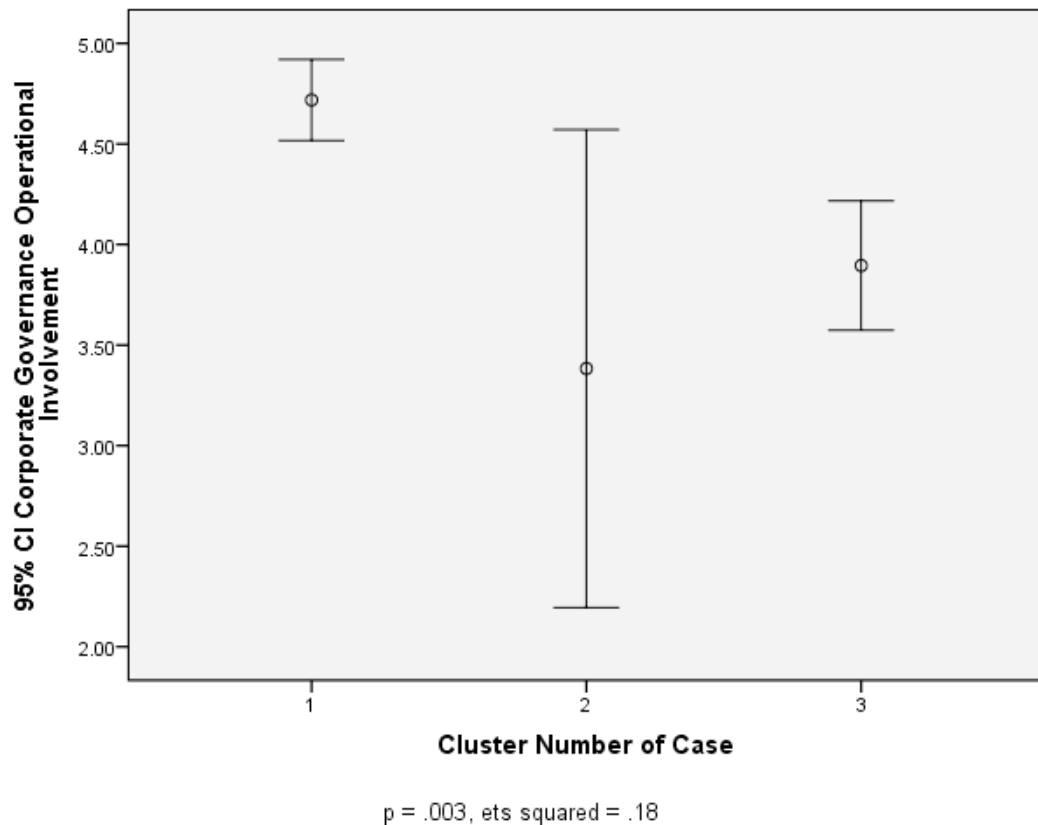
Figure 20. CI of Corporate Governance - Strategic Involvement



Corporate Governance - Operational Involvement:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of owner's operational involvement. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the operational involvement scores for the three PMS clusters: $F(2, 58) = 6.33$, $p = .003$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .18 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 2 ($M = 3.38$, $SD = 1.66$) and Cluster 3 ($M = 3.90$, $SD = .94$) were significantly different from Cluster 1 ($M = 4.72$, $SD = .38$). Cluster 3 did not differ significantly from Cluster 2.

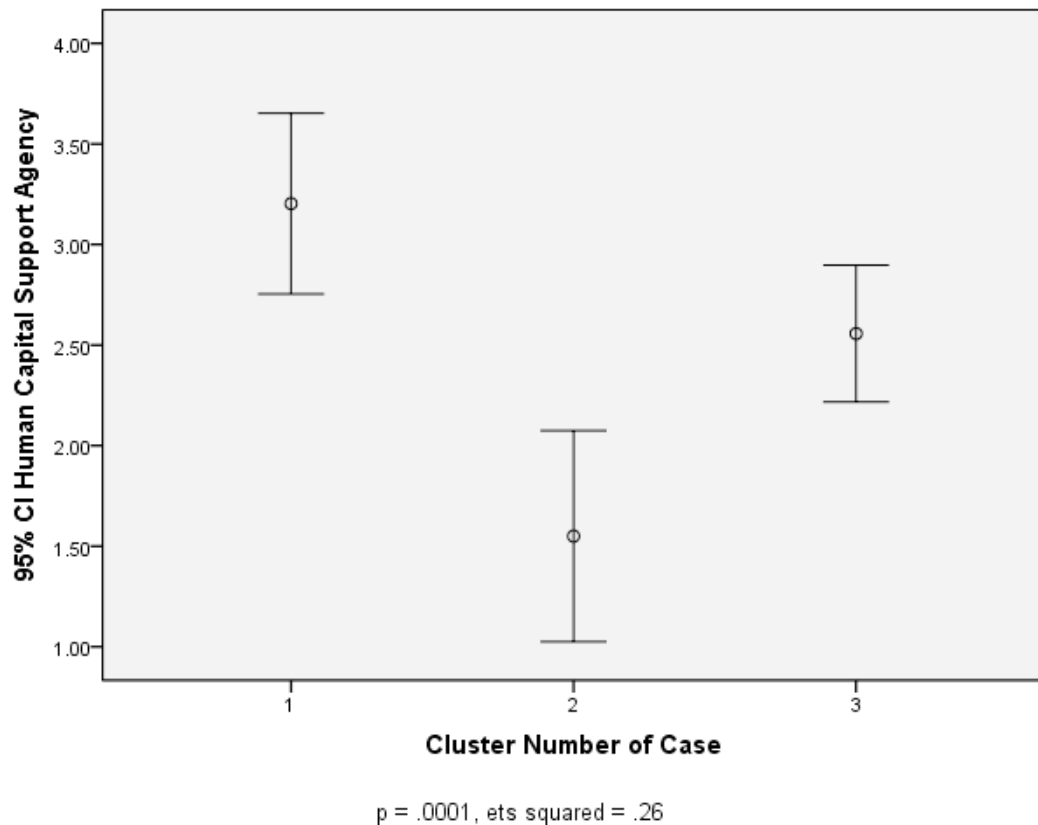
Figure 21. CI of Corporate Governance - Operational Involvement



Human Capital - Support Agency:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of support agency use. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the support agency scores for the three PMS clusters: $F(2, 58) = 9.977$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .26 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 3.20$, $SD = .84$) and Cluster 3 ($M = 2.56$, $SD = .99$) were significantly different from cluster 2 ($M = 1.55$, $SD = .73$). Cluster 3 did not differ significantly from Cluster 1.

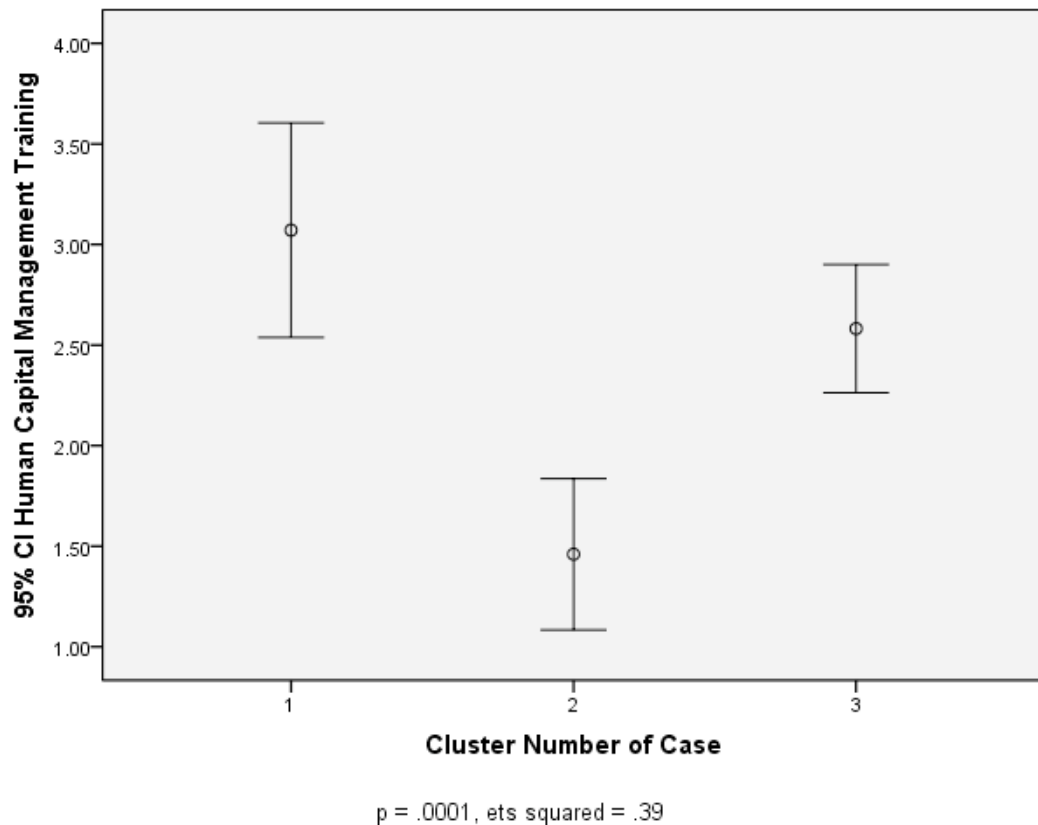
Figure 22. CI of Human Capital - Support Agency



Human Capital - Management Training:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of management training. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the management training scores for the three PMS clusters: $F(2, 54) = 10.662$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .39 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 3.07$, $SD = .92$) and 3 ($M = 2.58$, $SD = .90$) were significantly different from Cluster 2 ($M = 1.46$, $SD = .53$). Cluster 3 did not differ significantly from Cluster 1.

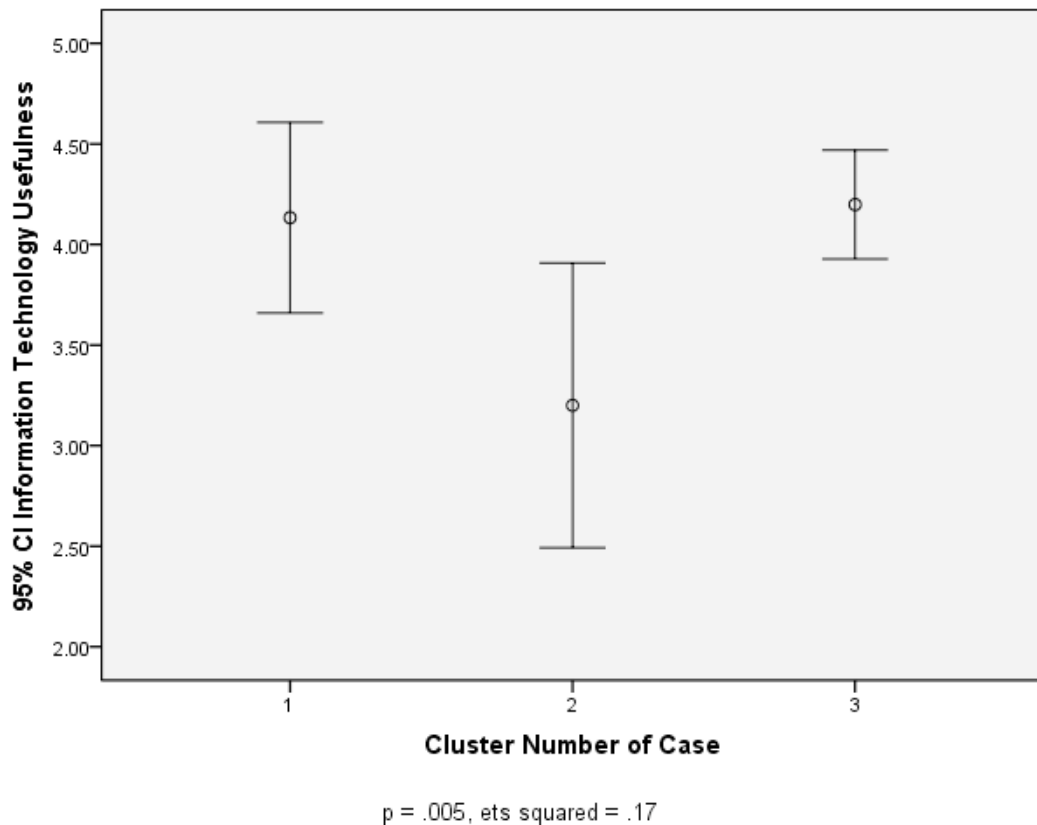
Figure 23. CI of Human Capital - Management Training



Information Technology Usefulness:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of Information technology usefulness. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the IT usefulness scores for the three PMS clusters: $F(2, 56) = 5.75$, $p = .005$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared was .17 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 4.13$, $SD = .86$) and 3 ($M = 4.20$, $SD = .77$) were significantly different from Cluster 2 ($M = 3.20$, $SD = .99$). Cluster 3 did not differ significantly from Cluster 1.

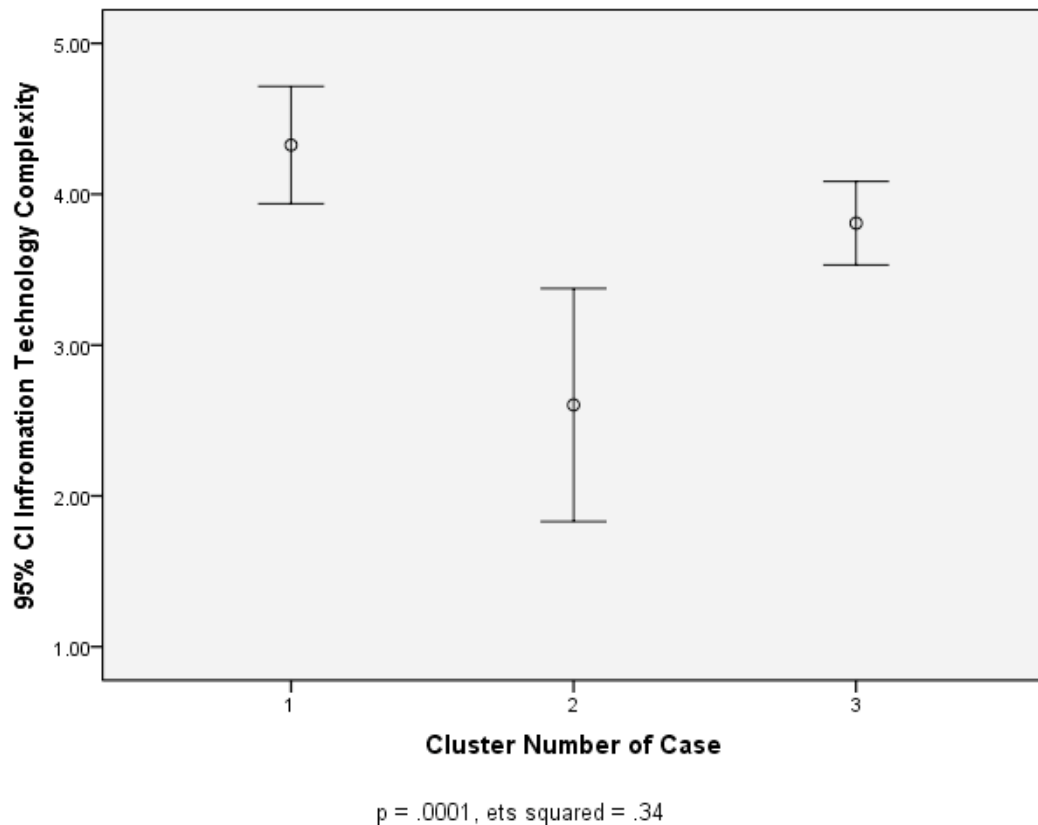
Figure 24. CI of Information Technology Usefulness



Information Technology Complexity:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of information technology complexity. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the IT complexity scores for the three PMS clusters: $F(2, 52) = 13.37$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .34 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 4.33$, $SD = .67$) and 3 ($M = 3.80$, $SD = .77$) were significantly different from Cluster 2 ($M = 2.60$, $SD = 1.00$). Cluster 3 did not differ significantly from Cluster 1.

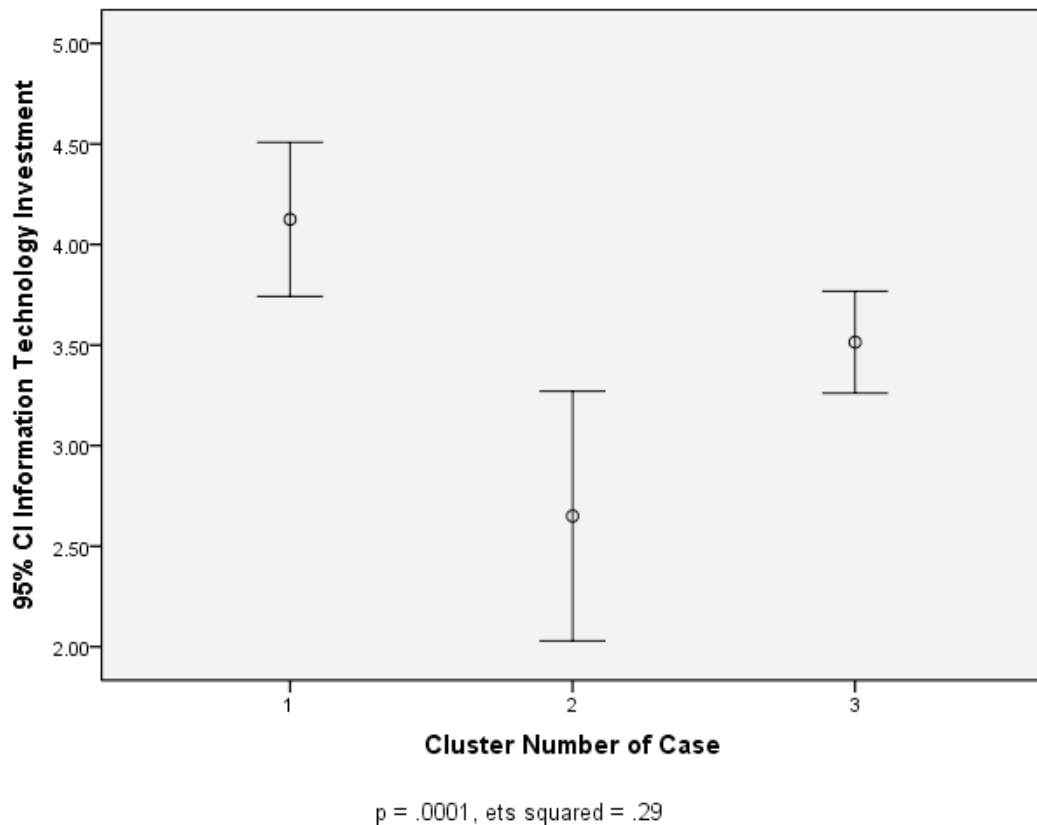
Figure 25. CI of Information Technology Complexity



Information Technology Investment Level:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on levels of information technology investment level. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the IT investment level scores for the three PMS clusters: $F(2, 56) = 11.468$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .29 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 4.13$, $SD = 0.66$), Cluster 2 ($M = 2.65$, $SD = .87$) and Cluster 3 ($M = 3.51$, $SD = .74$) were significantly different from each other.

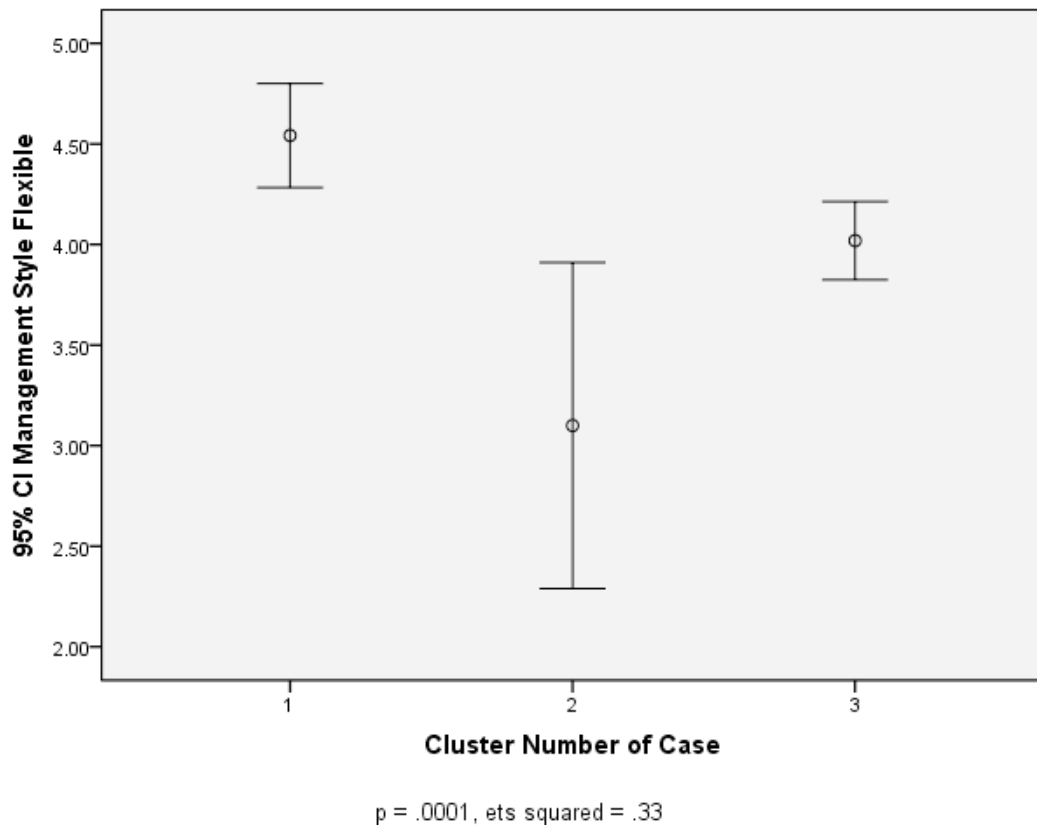
Figure 26. CI of Information Technology Investment Level



Management Style – Emphasis on Flexibility and Adaptation:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on a management style that emphasizes flexibility and adaptation. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the management style scores for the three PMS clusters: $F(2, 58) = 14.299$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .33 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 4.54$, $SD = .48$), Cluster 2 ($M = 3.1$, $SD = 1.13$) and Cluster 3 ($M = 4.02$, $SD = .57$) were significantly different from each other.

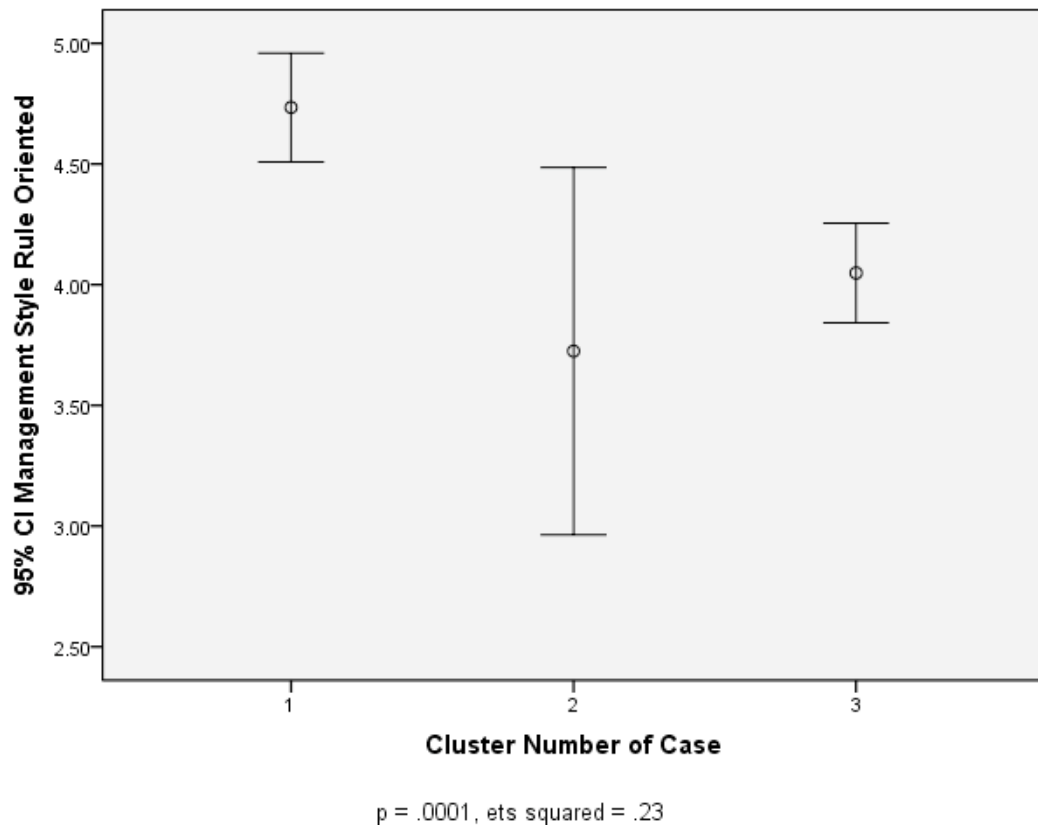
Figure 27. CI of Management Style – Emphasis on Flexibility and Adaptation



Management Style – Emphasis on Rules and Regulations:

It satisfied the assumption of Homogeneity with Sig. value more than .05. A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on a management style that emphasizes rules and regulation. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the management style scores for the three PMS clusters: $F(2, 59) = 8.683$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .23 (ibid). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Cluster 1 ($M = 4.73$, $SD = .42$) was significantly different from cluster 2 ($M = 3.73$, $SD = 1.06$) and Cluster 3 ($M = 4.05$, $SD = .61$). Cluster 3 did not differ significantly from Cluster 2.

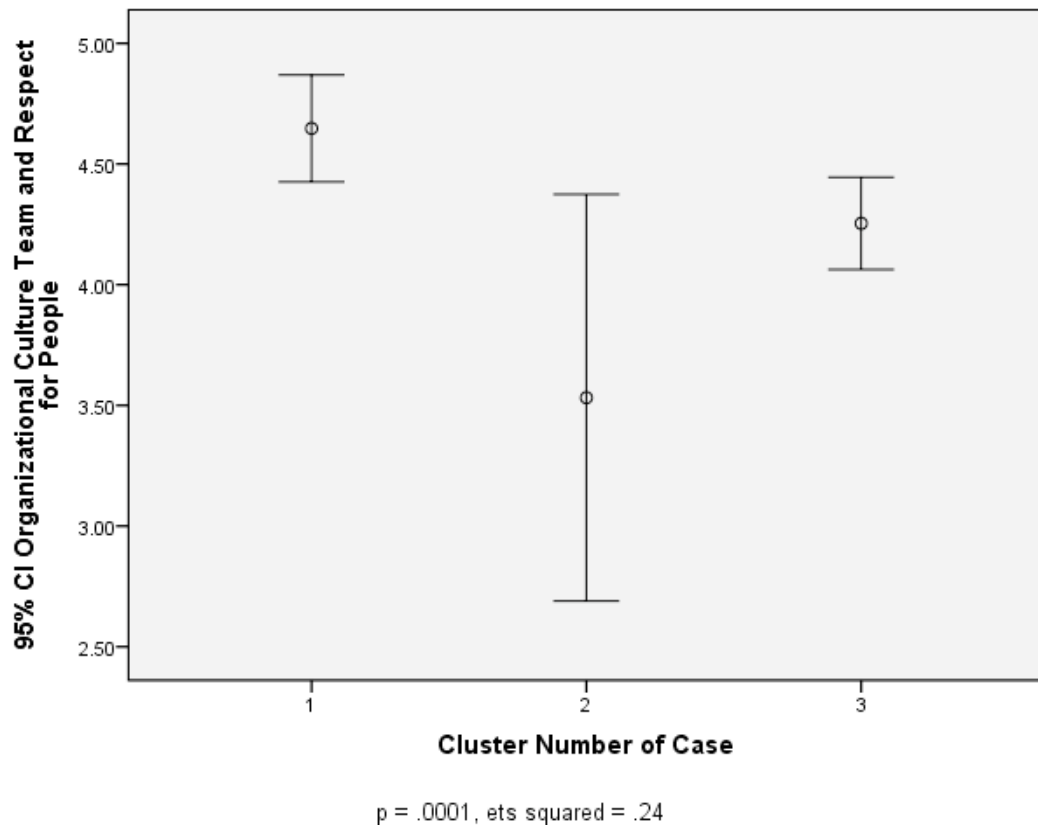
Figure 28. CI of Management Style – Emphasis on Rules and Regulations



Organization Culture – Team and Respect for People Orientation:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on organization culture that emphasizes team work and respect for people. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the organization culture scores for the three PMS clusters: $F(2, 55) = 8.882$, $p = .0001$. The actual difference in means scores between the clusters was quite small. The effect size, calculated using eta squared, was .24 (*ibid*). Post-hoc comparisons using the Tukey HSD test and Bonferroni test indicated that the mean score for Cluster 1 ($M = 4.65$, $SD = .40$) and Cluster 3 ($M = 4.25$, $SD = .55$) were significantly different from Cluster 2 ($M = 3.53$, $SD = 1.10$). Cluster 3 did not differ significantly from Cluster 1.

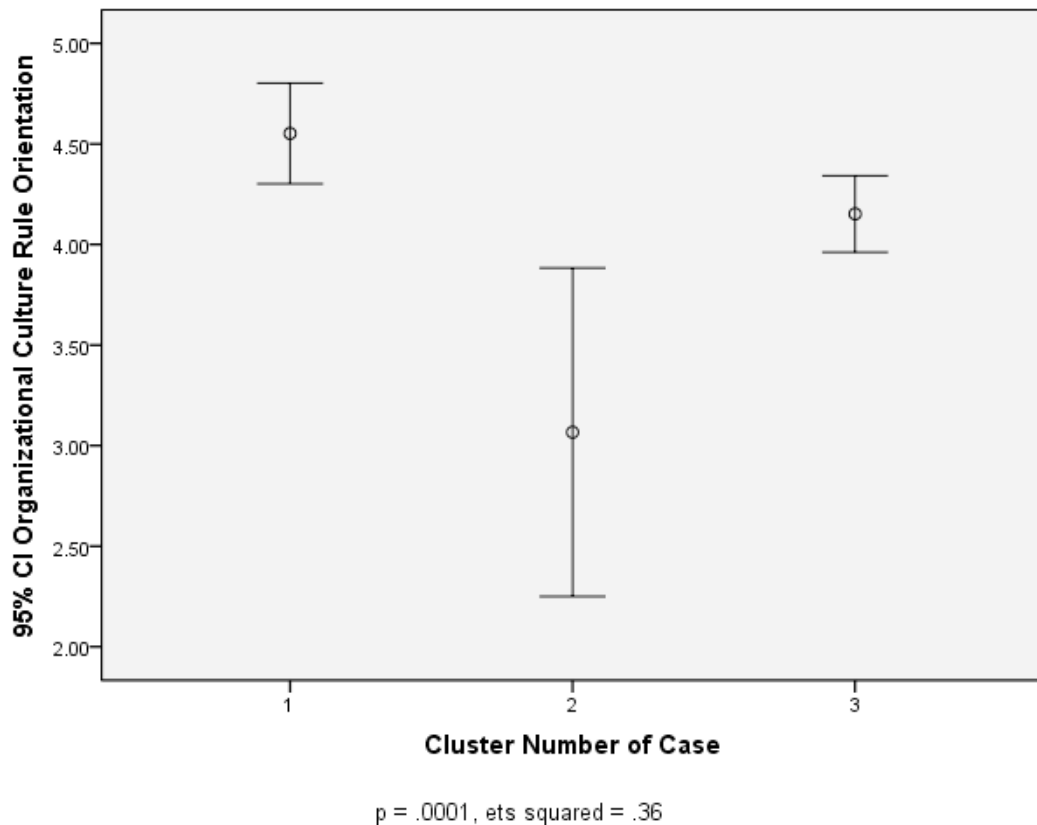
Figure 29. CI of Organization Culture – Team and Respect for People Orientation



Organization Culture – Rule Orientation:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on organization culture that emphasizes rule. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the organization culture scores for the three PMS clusters: $F(2, 57) = 16.068$, $p = .0001$. The actual difference in means scores between the clusters was quite large. The effect size, calculated using eta squared, was .36 (ibid). Post-hoc comparisons using the Tukey HSD test and Bonferroni test indicated that the mean score for Cluster 1 ($M = 4.55$, $SD = .47$) and Cluster 3 ($M = 4.15$, $SD = .54$) were significantly different from Cluster 2 ($M = 3.07$, $SD = 1.14$). Cluster 3 did not differ significantly from Cluster 1.

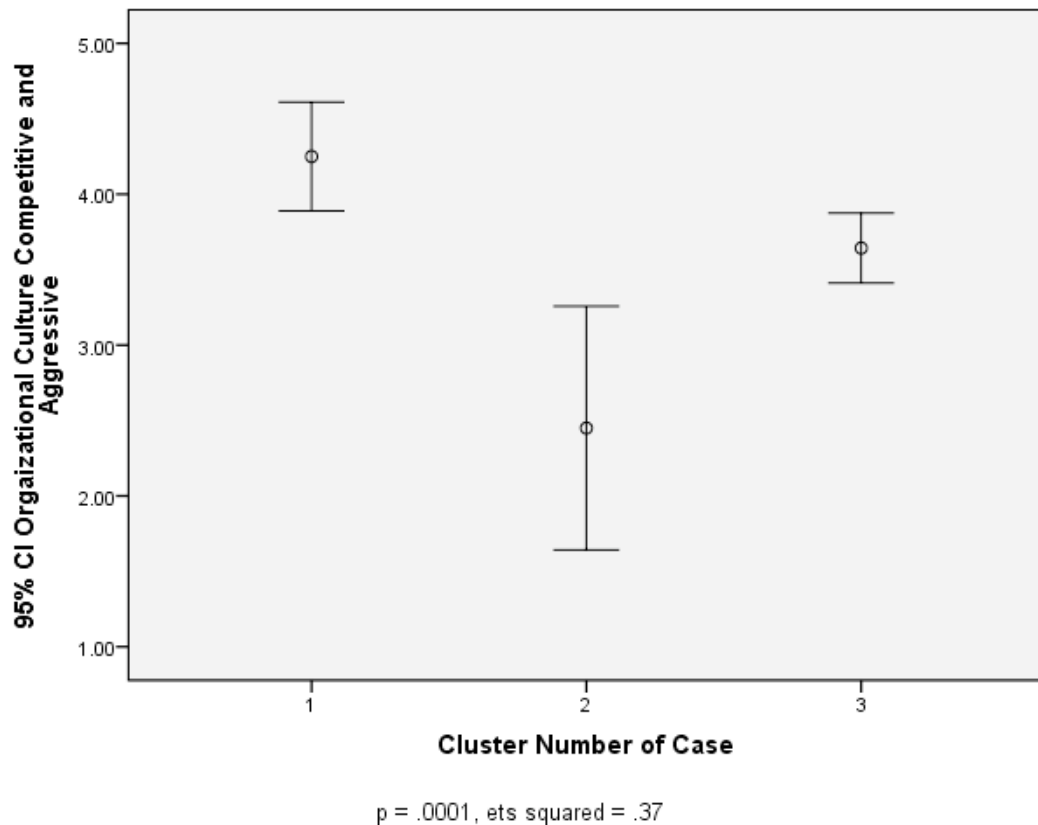
Figure 30. CI of Organization Culture – Rule Orientation



Organizational Culture – Competitive and Aggressiveness:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on organization culture that practices competitive and aggressiveness. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the organization culture scores for the three PMS clusters: $F(2, 58) = 17.156$, $p = .0001$. The actual difference in means scores between the clusters was quite high. The effect size, calculated using eta squared, was .37 (ibid). Post-hoc comparisons using the Tukey HSD test and Bonferroni test indicated that the mean score for Cluster 1 ($M = 4.25$, $SD = .689$), Cluster 2 ($M = 2.45$, $SD = 1.13$) and Cluster 3 ($M = 3.64$, $SD = .68$) were significantly different from each other.

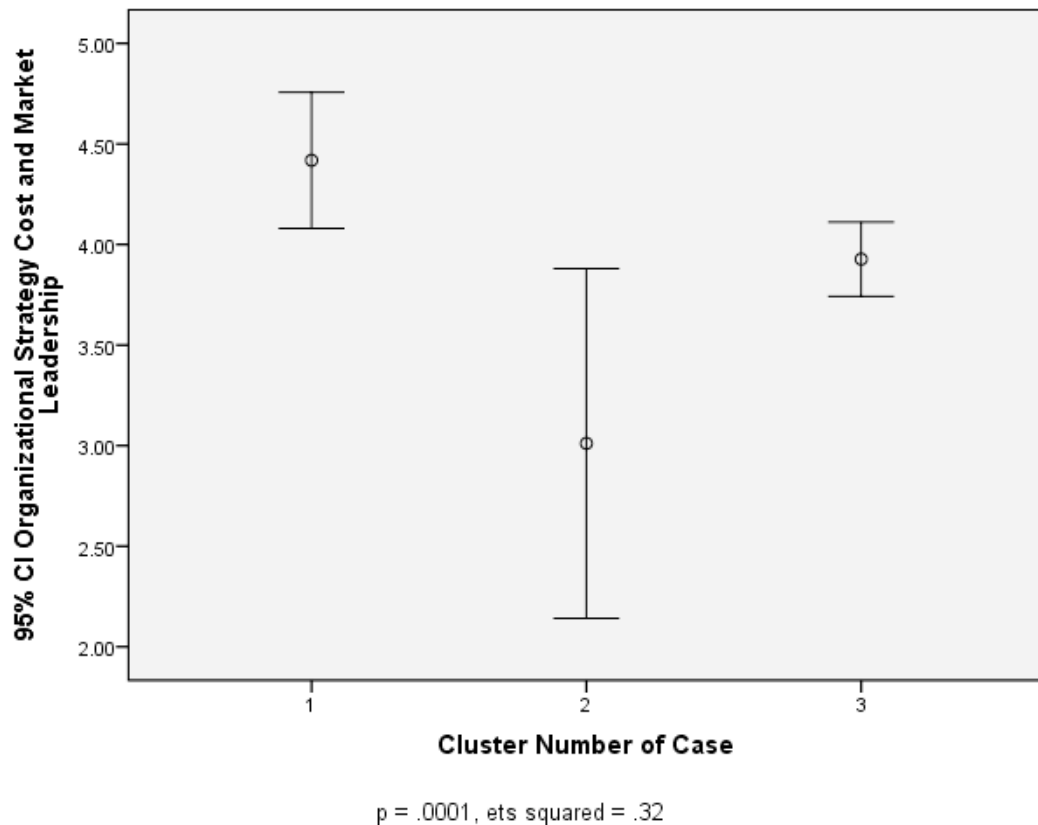
Figure 31. CI of Organizational Culture – Competitive and Aggressiveness



Organization Strategy – Cost and Market Leadership:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welch and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on cost and market leadership business strategy. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the business strategy scores for the three PMS cluster: $F(2, 55) = 12.579$, $p = .0001$. The actual difference in means scores between the clusters was quite high. The effect size, calculated using eta squared, was .32 (ibid). Post-hoc comparisons using the Tukey HSD and Bonferroni tests indicated that the mean score for Cluster 1 ($M = 4.42$, $SD = .63$), and Cluster 3 ($M = 3.93$, $SD = .52$) significantly different from Cluster 2 ($M = 3.01$, $SD = 1.13$). Cluster 3 did not differ significantly from Cluster 1.

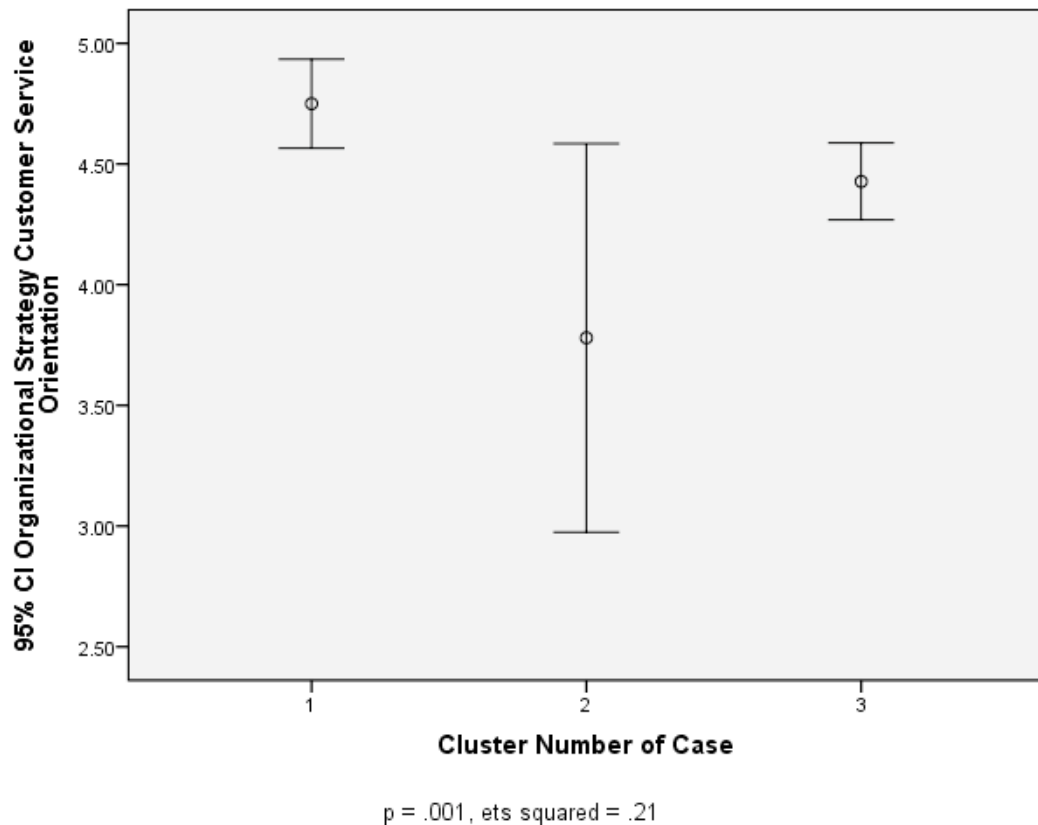
Figure 32. CI of Organization Strategy – Cost and Market Leadership:



Organization Strategy – Customer Service Orientation:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welch and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on customer service orientation business strategy. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the business strategy scores for the three PMS clusters: $F(2, 59) = 8.201$, $p = .001$. The actual difference in means scores between the clusters was quite high. The effect size, calculated using eta squared, was .21 (ibid). Post-hoc comparisons using the Tukey HSD test and Bonferroni test indicated that the mean score for Cluster 1 ($M = 4.75$, $SD = .35$) and Cluster 3 ($M = 3.93$, $SD = .52$) were significantly different from Cluster 2 ($M = 3.78$, $SD = 1.13$). Cluster 3 did not differ significantly from Cluster 1.

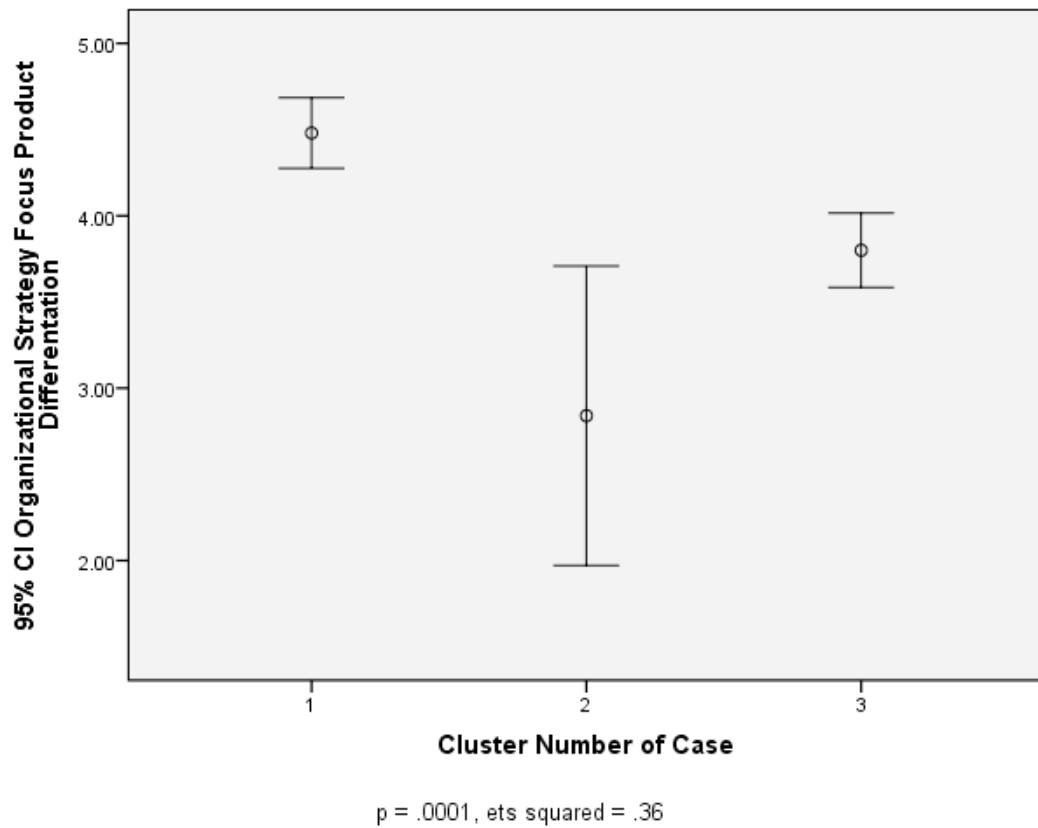
Figure 33. CI of Organization Strategy – Customer Service Orientation



Organization Strategy – Focus-Product Differentiation:

It did not satisfy the assumption of Homogeneity with Sig. value less than .05. It was proposed that Welsh and Brown-Forsythe tests could be used instead. However, this research proceeds with ANOVA as the analysis is reasonably robust to violations of this assumption (Stevens 1996, p.249). A one-way between-groups analysis of variance was conducted to explore the impact of PMS cluster type on focus-product differentiation business strategy. Subjects were divided into three clusters according to their performance measurement development level (conducted K-means cluster analysis). There was a statistically significant difference at the $p < .05$ level in the business strategy scores for the three PMS clusters: $F(2, 57) = 16.130$, $p = .0001$. The actual difference in means scores between the clusters was quite high. The effect size, calculated using eta squared, was 0.36 (ibid). Post-hoc comparisons using the Tukey HSD test and Bonferroni test indicated that the mean score for Cluster 1 ($M = 4.48$, $SD = .37$), Cluster 2 ($M = 2.84$, $SD = 1.21$) and Cluster 3 ($M = 3.00$, $SD = .63$) were significantly different from each other.

Figure 34. CI of Organization Strategy – Focus-Product Differentiation



Summary of the Findings

The results indicate significant differences between the three clusters in all of the internal resources at $p < 0.05$ with large eta square. Table 23 displays the summary of the Post-hoc tests, indicating where the differences exist among the clusters.

Table 23 indicates that there are significant differences between Advanced PMS and Traditional PMS group in all of the organization internal resources. There are also significant differences between the Traditional PMS and Balanced PMS groups in all of the internal organization resources with the exception of Corporate Governance with operation involvement and Rules and Regulation Management Style. However, the differences between Advanced PMS and Balanced PMS group are not significant ($P < .05$) in half of the organization internal resources items.

Table 23: Post-hoc Tests Summary

Variables	Advanced (1) Vs Traditional (2)	Advanced (1) Vs Balanced (3)	Traditional (2) Vs Balanced (3)	Summary
Corporate Governance - Strategic Involvement	O	O	O	ALL – Sig.
Corporate Governance - Operational Involvement	O	O	X	3 & 2 Not Sig.
Information Technology Usefulness	O	X	O	3 & 1 Not Sig.
Information Technology Complexity	O	X	O	3 & 1 Not Sig.
Information Technology Investment Level	O	O	O	ALL – Sig.
Human Capital - Support Agency	O	X	O	3 & 1 Not Sig.
Human Capital - Management Training	O	X	O	3 & 1 Not Sig.
Management Style - Flexibility and Adaptability	O	O	O	ALL – Sig.
Management Style - Rules and Regulations	O	O	X	3 & 2 Not Sig.
Organizational Culture – Team and Respect for People	O	X	O	3 & 1 Not Sig.
Organizational Culture – Rule Oriented	O	X	O	3 & 1 Not Sig.
Organizational Culture – Competitive and Aggressiveness	O	O	O	ALL – Sig.
Organizational Strategy – Cost and Market Leadership	O	X	O	3 & 1 Not Sig.
Organizational Strategy – Customer Service Orientation	O	X	O	3 & 1 Not Sig.
Organizational Strategy – Focus Product Differentiation	O	O	O	ALL – Sig.

O - Significant at 0.05

X - Not-Significant at 0.05

4.6 Multiple Regression

The multiple regression analysis attempts to provide some indications for RQ1-B which asked: *How well do the organization's internal resources predict the development of PMS? How much variance in PMS can be explained by each of the internal resources?*

The main objective of this analysis was to investigate the roles of corporate governance, human capital, information technology, management style, organization culture and organization strategy on the development of the performance measurement system. Multiple regression was conducted to investigate the degree of influence of the internal variables on the development of PMS.

Before a decision to use MLR can be made, the number of the sample should be taken into consideration. Various authors have used various method of calculating the minimum number of the sample to run MLR. According to Steven (1996:72) in Pallant (2007), fifteen subjects or samples per predictor are recommended for a reliable equation. Tabachnick and Fidell (2007:123) provide a formula to calculate the minimum sample size. However, using Steven's rule of thumb, this research identified three independent variables (as a result of backwards MLR), which means we need a minimum of forty-five samples. Our sample size (62 respondents) satisfied this requirement.

As mentioned above, the backward method of multiple regression was conducted by placing all predictor variables in the model. Using this method, a predictor could be removed if it satisfied the removal criterion, leaving only those predictors with statistical significance in the model (Field, 2005).

Non-significant correlation amongst the variables was removed from the regression analysis. Appendix 15A and 15B show the correlation of variables before and after the non-significant correlation variables were removed. Further correlation analysis was conducted to remove correlation of more than 0.70 (see Appendix 15C). This reduced the number of variables to seven. Additionally, the multi-co linearity was checked using the co linearity diagnostic test in the regression analysis. A common cut off threshold is a tolerance value of .10, which corresponds to a VIF value of 10 (Hair *et al.*, 2006). The results showed that all the variables in the model have a tolerance value of more than .10 and a variance inflation factor (VIF) of less than 10 (see Appendix 16).

Backward regression analysis produced five models of regression (see Appendix 16). Considering the Mahalobis Distance of the Residual Statistics (Maximum = 15.826) and Cook's Distance with maximum value of .234 suggesting no major problem (Pallant, 2007), in determining the number of independent variables to be included in our multiple regression

analysis (Tabacknik and Fidell, 1996), model 5 satisfied all the necessary criteria (see Table 24). Figure 35 also indicates that there were no major deviations from normality. Table 25 summarizes the final model with respect to the independent variables. Matrix scatterplots in Figure 36 illustrates the correlation of the three independent variables in the final model.

Table 24: Residual Statistics

	Minimum	Maximum	Mean	SD
Mahal. Distance	.010	15.826	3.019	3.509
Cook's Distance	.000	.234	.029	.049
Centered Leverage Value	.000	.368	.070	.082

Note: Dependent Variable: Performance Measurement System

Table 25: Model Summary

Model	R Square	p-value ANOVA	Independent Variables	B	Beta	t	p-value	95% CI	
								Lower 2.5%	Upper 2.5%
5	.666	.000	Corporate Governance Strategic Involvement Management Style - Flexible	.224	.368	3.046	.004	.075	.372
			Information Technology Investment	.222	.258	2.069	.045	.005	.439
				.275	.345	3.055	.004	.093	.457

Note: Dependent Variable: Performance Measurement System

Result:

Backward regression was used to assess the ability of seven control variables (corporate governance - strategic involvement; corporate governance - operational involvement; management style – flexible; management style – rule oriented; organizational strategy – focus product differentiation; organizational culture – teams and respect for people, and Information technology investment) to predict the level of performance measurement system. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multi-co linearity and homoscedasticity. In the final model (model no.5), three control variables (corporate governance - strategic involvement; information technology investment, and management style - flexible) explained 66.6% of the variance in PMS adoption level (used R square due to small sample), $F(3, 40) = 26.627$, $P < .0001$). In the final model (model no. 5) only two control variables were statistically significant, with the corporate governance - strategic involvement recording a higher beta value (beta = .368, $p < .001$) than information technology investment (beta = .345, $p < .001$) and management style - flexible (beta = .258, $p < .001$).

Dependent Variable: Performance Measurement System

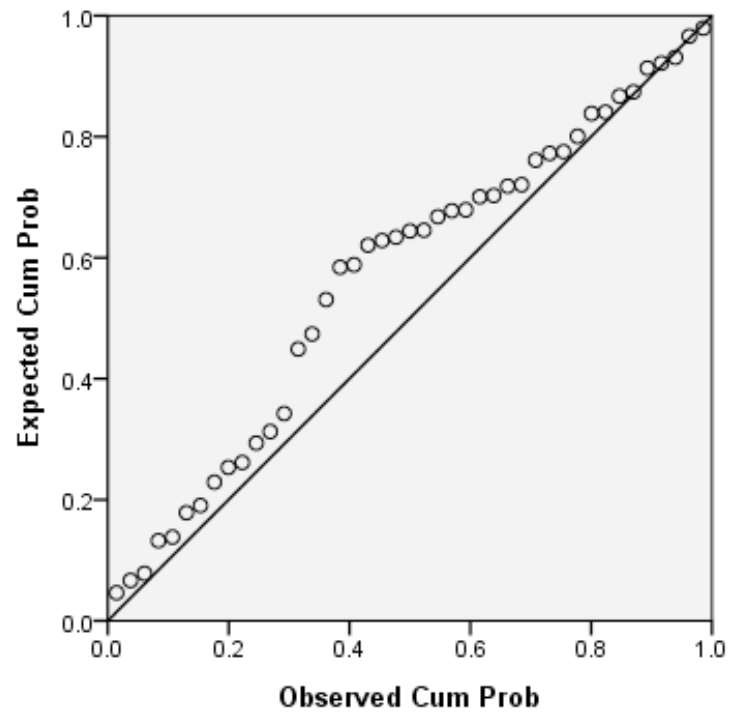
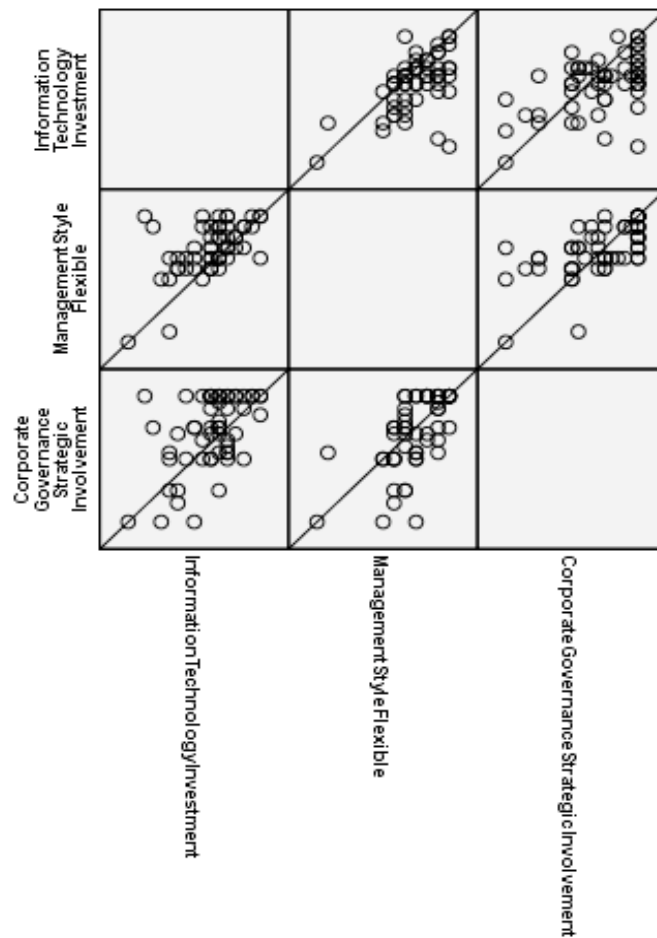


Figure 35. Normal P-P Plot of Regression Standardized Residual

Figure 36. Matrix scatterplots



4.7 Chapter Conclusion

This chapter has presented the data from the quantitative research which will be used to answer the first research question. Cluster analysis has been employed to determine the level of PMS adoption amongst service SME in Brunei and the findings will be analyzed and evaluated in Chapter Six. The following chapter describes the findings from the interviews conducted with staff members from the four case companies in Brunei who participated in the study. The information presented will be utilized to answer the second research question.

Chapter 5:

Findings - Qualitative Data Collection: Case studies of the performance measurement systems of four service sector Small and Medium Enterprises (SME) in Brunei Darussalam.

5.1 Introduction

This chapter is divided into three main sections using Yin's (1994) and Miles and Huberman's (1994) methods of qualitative analysis. The first section describes the case studies of four small and medium-sized enterprises (SME) from different industries, all of whom are considered successful in their respective activities. The next section compares and contrasts the four case companies according to the themes identified from the interviews. Following Corbin and Strauss's (1990) steps of analysis, the third section attempts to identify the relationships between the identified themes and the core factors of drivers and barriers of PMS adoption in the case companies. Below is a brief description of each of the four case companies:

- a. Case A – Its main activity is offering Islamic-based insurance known as 'Takaful'. They offer both General and Family Takaful.
- b. Case B – Its main activity is travel. The company offers both conventional travel & tours and specific Hajj & Umrah services.
- c. Case C – Its main activity is providing an education consultancy service and training.
- d. Case D – Its main activity is providing Information Technology solutions.

In spite of their perceived success, not all of the companies seem to have clear, formal performance measurement systems. In each case study, managers were asked to describe and comment on the six conceptualized factors influencing adoption of a performance measurement system outlined in the previous chapter within their organization. The case studies will provide evidence to indicate whether they have any influence or if there are in fact other factors which exhibit a greater impact. At the same time, the managers were also asked to explain their current performance measurement system, guided by the six conceptualized criteria of performance measurement system best practices, which are purpose, dimensions, flexibility and accountability of measurement, together with the bases of measures selected and their integration in the organization.

The following table summarizes the performance measurement systems based on the six criteria mentioned above.

Table 26. Summary of Performance measurement system criteria on case companies

Criteria	Sub-criteria	Case A	Case B	Case C	Case D
Dimensions of Measures	Measures/Type of Information	FIN	FIN	NF	F/NF
Bases for the above measures	<i>Service Type Sector:</i>				
	Contact time with customers	X	X	√	√
	Customer served per day	√	X	√	X
	Level of service/product customization	√	√	√	√
	Level of discretion given to employees	√	√	√	X
	Level of interaction with customers	√	√	√	√
	Level of process orientation	X	X	√	√
	Level of front-office orientation	√	√	√	X
	Process of service experience	√	X	√	√
	End result of service experience	√	√	√	√
	<i>Strategy:</i>				
	It is derived from strategy	√	√	√	√
	Its linkage of operations to strategic goals	√	√	√	√
	Its ability to provide fast, accurate feedback	∞	X	X	X
	<i>Others:</i>				
	Cost effective to collect	X	X	X	X
	Time efficient to collect	X	√	X	X
	Its ability to provide fast, accurate feedback	X	X	X	√
	Employees' recommendations	√	X	X	X
Purpose for measuring performance	<i>Achievement of goals and objectives:</i>				
	Improve current strategy	√	√	∞	√
	Identify defects in strategy	X	√	X	√
	Meet requirements of external stakeholders	√	√	∞	√
	<i>Evaluate, control and improve procedures and process:</i>				
	Make corrective actions	∞	√	√	√
	Control cost	√	√	X	√
	Monitor past performance	√	√	X	√
	Improve the quality of services	∞	∞	√	√
	Improve customer satisfaction	∞	∞	√	√
	Plan future performance	√	√	√	√
	Allow continuous improvement	√	√	∞	√
	<i>Compare and assess performance of teams, individuals and the organization:</i>				
	Monitor employee's performance	√	√	X	√
	Determining award and bonus	√	√	X	√
	Ensure employees perform their tasks accordingly	√	√	√	√
Accountability	Lowest level of performance measures is aligned with the strategic goal of the organization	√	√	√	√

of performance measures	All staff focuses their attention and efforts on the organization's strategic objectives	√	∞	√	√
	Causal relationship of each measures were clearly shown	X	X	X	√
	An appointed person/team is assigned to monitor the high level measures	√	X	X	√
	Mid-level managers are assigned to be responsible for their own unit's individual performance measures	√	√	√	√
	Procedures for performance measurement process are in place and clearly defined	∞	X	X	√
	Managers' opinions from different managerial levels are taken into account in developing the performance indicators	√	X	√	√
	Opinion of customers taken into account in developing the performance indicators	X	X	X	√
	Opinion of employees taken into account in developing the performance indicators	√	X	X	√
	Opinion of suppliers taken into account in developing the performance indicators	X	X	√	√
	Opinion of other external stakeholders (such as the government and the public) taken into account in developing the performance indicators	√	√	√	√
Flexibility and Interactive level of the system	Flexible, rapidly changeable and maintainable	X	X	X	√
	Ability to track changes in the environment	X	X	X	√
	Easy to implement, use and run	X	X	X	√
	Graphically and visually effective	∞	∞	∞	∞
Integration of the system	Management systems and processes are integrated	√	∞	X	√
	There is a dynamic relationship among different departments, units, teams etc in the company	√	√	√	√
	Improvement initiatives are adopted for the benefit of the whole organization	√	√	√	√
	Different functional systems are integrated into our performance measurement system	∞	∞	X	√
	Different performance report can be easily communicated and access simultaneously	∞	∞	∞	∞
	Performance measures are linked to rewards system	√	√	X	√
	Integration of performance measurement system is supported by our technological capability	∞	∞	X	√
TOTAL		30	25	24	42

√ Exists
 ∞ Partly-Exists
 X Non-Existent
 F Financial
 NF Non-Financial

5.2 Case A Performance Measurement System

5.2.1 Introduction

Case A was chosen for this case study because it was the first insurance company in Brunei to be awarded an international insurance rating through 'Fitch Rating'. They received the award in 2010. According to the Managing Director, '*We have been awarded BBB+ from Fitch rating.... Fitch rating is an international rating agency.... They came over here on our invitation, to have our company rated*'. It is also the first company in the country that offers Islamic-based insurance (takaful). This double first makes the company a useful choice for developing this research into the experiences of organizations in adopting their performance measurement system and for discovering the role of the six conceptualized influencing factors in the adoption of their chosen system.

The company was incorporated in March 1993 with a paid-up capital of BND 10 million. Case A offers both general and family insurance. Performance in each of these two different fields is kept on track by the Managing Director so he can direct the activities of the company appropriately.

The following shows the vision and mission statements as well as the goals and objectives of the company (www.insuranstaib.com.bn)

Vision

'To develop Case A as one of the five leading companies in the insurance industry by the year 2007 and to position IIT as the top three leading companies by year 2010'

Mission

'To provide competitive Takaful / Islamic insurance products and Services that comply to the Syariah principles as well as to give sound and Professional consultation services to customers through well trained, highly courteous and efficient personnel supported by the use of advanced and latest information technologies (IT)'

Goals

- To increase shareholders wealth in the long-term.
- To achieve excellence in customer care.
- To strive for continuous increase in market share.
- To maximize profits.
- To increase efficiency.

5.2.2 Profiles of Interviewees

At the time of the study, the company comprises seventy-one employees. They include the Managing Director (MD), Heads of Departments (HoD), Senior Executive Officers, Executive Officers and Clerks. Interviews were conducted with the Managing Director, eight Heads of Department and an Executive Officer. These Heads of Department were chosen because they are all involved in the company's strategy development and are directly responsible for the performance of their department. For this reason, it was very useful to conduct interviews with them in order to understand the structure of their performance measurement system and their experience in adopting this. Interviews were conducted with each participant individually in either their own office or in the boardroom.

- (i) Mr A1 is the Managing Director of the company. At the time of the interview, he had been working with the company for more than 20 years. He oversees the overall performance of the company through reports submitted by all Heads of Department.
- (ii) Ms A2 is the Head of the Human Resource (HR) Department. She is responsible for ensuring the welfare of the employees in terms of training, annual performance evaluation and discipline.
- (iii) Ms A3 is the Head of Department for Finance. This department handles both debt recovery and financial reporting.
- (iv) Ms A4 is the Head of Department for Banka Takaful. Banka Takaful is one of the channels of distribution for the company's products. Here, insurance products are distributed through financial institution and banks.
- (v) Mr A5 is the Head of Department for Agency, the section that is responsible for the appointment and monitoring of their insurance agents. This is another channel of distribution for their insurance products.
- (vi) Ms A6 is the Head of Department for Business Operations. This department is responsible for both the general takaful and the family takaful. This is the largest department in terms of staff. The department also handles insurance sales over the counter. This is a further channel of distribution.
- (vii) Mr A7 is the Head of Department for Risk and Re-Takaful, which handles specialized and made-to-order takaful for large or high-risk clients.
- (viii) Mr A8 is the Head of Department for Business Development. This is a support department that runs as a product development centre.
- (ix) Mr A9 is the Head of Department for Claims. The department handles both general and family insurance claims made by clients.
- (x) Ms A10 is one of the Executive Officers from the Operations Department. She reports directly to the Operations Manager.

5.2.3 Overview of the Case A Performance Measurement System

Case A implemented its first five-year-plan four years ago with minor assistance from a local academic institution. The five-year strategic plan provides details of the financial targets of the whole organization. It was presented to and approved by the Board of Directors (BoD). Besides this, it is an annual exercise for the management to prepare their own budget, which will then be reviewed by the management team and the Board of Directors. The proposed annual budget proposal depends on the previous performance of the company and takes into account the five-year strategic plan. Proposals made by Heads of Department will be compiled and reviewed by the Finance Manager before they are presented for approval in the management meeting. In preparing the annual budget, each manager will consult their subordinates in order to get feedback. However, everything ultimately depends on the M.D. and the Finance Manager producing the final budget allocation and financial targets for each department. At the same time, the operational target is still under the jurisdiction of each Head of Department. In order to ensure the employees reach their targets, all employees need to fill in an annual performance evaluation.

Case A's performance measurement system seems to place more emphasis on the financial outcome at the corporate level. The performance measurement system is fragmented departmentally and so is not holistic, preventing links between departments. Whether it is the five-year strategic plan or the annual budget, a clear process of identifying and prioritizing objectives within the organization is still lacking. The company follows the traditional performance measurement system whereby no strategic mapping exercise exists.

The purpose of the existing performance measurement system is to monitor whether the organization achieves their stated goals and objectives. It focuses on comparison of performance with the previous year's rather than as a means of performance improvement in relation to such factors as customer satisfaction or quality of services. The development of measures was based on the global organization strategy. It was also based on the nature of their business processes. Case A operations achieved a stable profitability with Return on Assets (ROA) for 2009 estimated at 5.4 percent. The table below illustrates the aggregate performance of Case A from 2005 to 2008.

Table 27. Aggregate Performance of Case A

Ended 31 December	2005	2006	2007	2008
Total equity or fund/total assets (%)	88	87	88	89
ROA (%)	8	10	10	7
ROE (%)	10	11	11	8
Net surplus (BND 000)	7,649	9,498	9,844	7,118

(Source: www.fitchratings.com 30 April 2010)

In terms of the accountability of their current system, the management ensures that their lower level measures are aligned to their strategic goal. In ensuring this, Heads of Department were required to come up with their own targets and be responsible for the achievement of these. The development of measures was also influenced by the rules and regulations enforced by the Ministry of Finance through the 'Takaful Order'. However, there seems to be a lack of causal relationship between the different performance measurements. The process of performance measurement identification and development is also not clearly defined. Heads of Department do not have any systematic mechanism for developing the measures, with the exception of the financial measures.

Due to the need to approach and obtain approval from the Board of Directors, the current system is quite inflexible. Any changes to the targets need to be submitted for approval even though the management team is able to identify changes in the market independently.

The system itself is integrated into the other management systems but it is not fully automated. Manual reports still need to be produced in order for any department to access information from the others. This is due to lack of investment in information systems in the implementation of the company's performance measurement system.

The performance measurement system of Case A can be illustrated in the following figure. It shows the origins of targets, target reviews, target evaluation and how the targets link individuals within the organization.

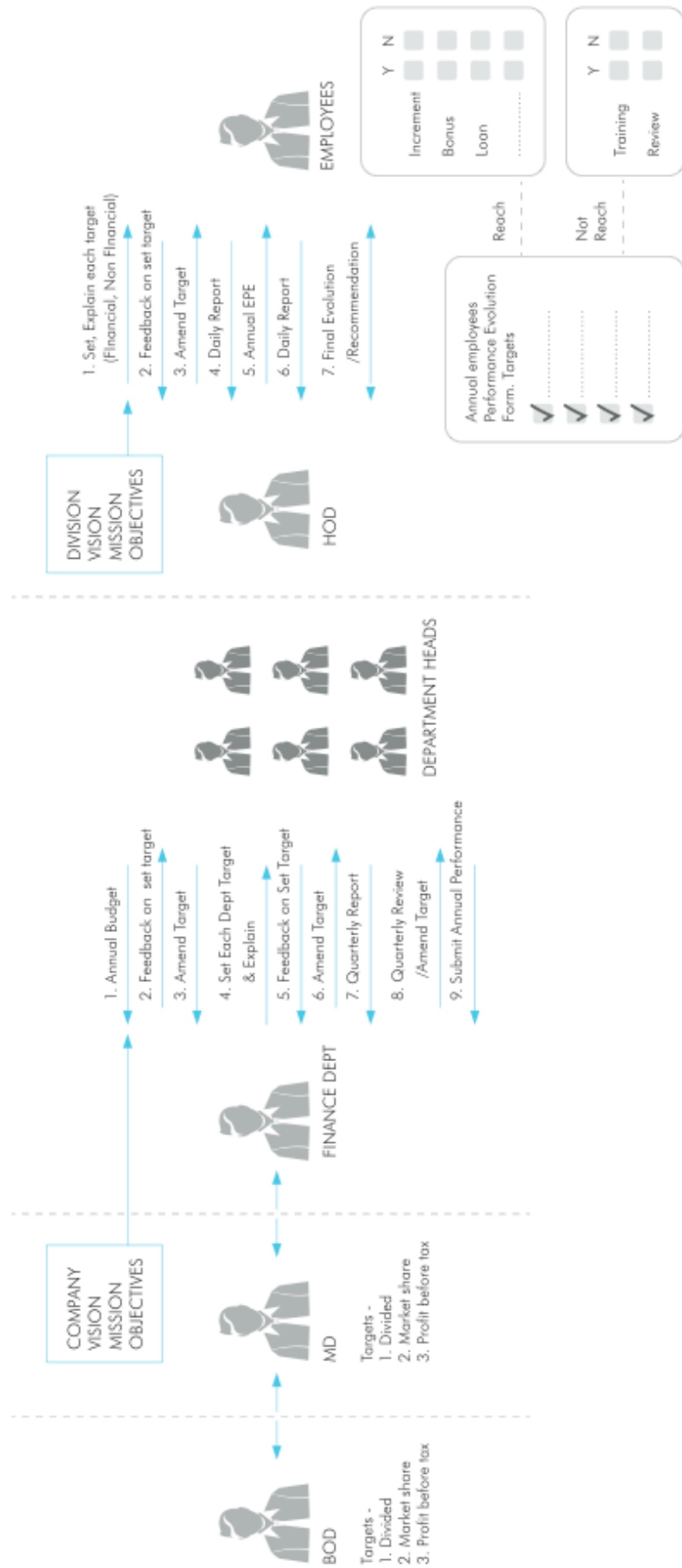


Figure 37. Flow diagram illustrating development of key performance measures in Case A

5.2.4 Identifying the factors influencing PMS adoption

5.2.4.1 Overview of Case A's Corporate Governance

Case A has a Board of Directors whose role is generally an advisory one. The members are not involved in the day-to-day operations of the company. The Board gives advice on the direction of the firm and reviews large-scale investment proposals. Certain Board members – the Syariah or Islamic Law members – also assess the suitability of any new insurance products, approving only those which fulfill all of their requirements. The implication of this involvement, noted by Ms A4, is that it can take longer for new products to be released to the public.

The Heads of Department report directly to the Managing Director and all are involved in strategy development. The Board merely monitors this aspect and the M.D. reports that, in his experience, there has been little hindrance from the Board.

For each Department, financial performance targets are prepared and submitted quarterly to the management before being presented to the Board of Directors. In addition, the company has to submit its five year business plan to the insurance regulator in compliance with the "Takaful Order".

The Managing Director identified three main stakeholders; the shareholders, the customers and the employees. The shareholders expect maximum profit and they compare the profit income year on year and with the budgeted figure. They also look at the expenses to see whether the company is spending more than the income generated. The focus is on generated profit before tax. The main performance indicator set by management for the shareholders is return on investment (ROI).

The independence of the management team from the Board of Directors has had a positive influence on the daily operations of the organization. It encourages the team to use initiative in setting objectives and the measures they will use to reach their set targets.

5.2.4.2 Overview of Case A's Human Capital

Staff training is one of the key objectives of the company and budgets for this are allocated on an annual basis. Ms A2 mentioned that investment in training involves every level of management and officers. Each personnel member attends training at least twice a year. According to the Managing Director, the firm needs to invest in human capital to groom the staff so they possess the necessary knowledge as there is a lack of both expertise and insurance training institutions within the country. Mr. A9 added that the company tends to

promote its own employees first, filling the resulting vacant posts with new employees. This policy is good for the staff and they have something to look forward to in terms of self-development.

There is a company policy of rotating officers every six months to ensure they are knowledgeable in both over the counter operations and those of the back office. The aim of such training is to provide not only product knowledge but also procedural knowledge; that is, the calculations, filling in the carbon notes, payment methods, customer services, underwriting and risk management. Each employee should be able to understand how their work affects other people. Ms A10, an officer in the Operations Department, supported this idea, stating that, *'We learned all the products, we were trained that time, product, manual procedures.... Before we start work, we were trained.... Then every one of them has to involve attending customer.... We were given six months'*. Consequently, most of the Heads of Department claim that their staff are sufficiently experienced and have a good depth and breadth of insurance knowledge. Further to this, each officer is provided with their own job description.

Overall, the Heads of Department agree that the employees are well taken care of, especially in relation to training and self-development and there is also an emphasis on members of staff as individuals and concern for their welfare. Ms A6 comments, *'You have to know the family condition, what makes them sad, what made them happy, what makes them energetic'*. She makes an effort to understand her employees' attitudes because she believes this affects the overall performance of the company. This was confirmed by Ms A10, one of the Senior Executive Officers in the department, who mentioned that her boss's greatest challenge on being transferred to the Business Operations department was how to handle the unique character of each staff member.

In addition to training, employees are given tokens of appreciation for long service or on special occasions such as when they marry or have a child. Ms A2 explained, *'we appreciate them by giving them a gift such as for five years of service we gave Bohemian Crystal which is worth BND500'*. There are also two afternoons per month allocated for sports activities.

In evaluating the employees' performance, non-job-related activities such as sports are taken into account. The evaluation is based on the job description, but Mr. A9 reported that he believes it is imperative to discuss roles with each staff member and explain to them the areas that will be looked at in evaluating their performance. Some managers reported that there is a mutual understanding of what is expected from subordinates even though it is not all outlined in writing. Ms A3 found monitoring employees a challenging task. Even though

systems are in place, human nature may yet prevail and, on occasion, officers struggle to cope with their workload, particularly at peak times such as end of month.

The existence of an established annual employee evaluation form provides a positive impact on the adoption of performance measurement. This practice contributes to measurement culture within the organization and individuals are evaluated based on their achievement of set targets. The employees' targets that were set contributed to the overall performance of the whole organization.

In addition, easy access to training has contributed to an improvement in the managerial knowledge of the Heads of Department. For example, the Human Resource Manager showed me a 'Balanced Scorecards' training brochure that had been offered to them by training companies from a neighboring country. One particular manager is well-versed in 'Balanced Scorecard' concepts and tried to answer my interview questions based on the six common perspectives of the concept. The M.D. himself did his Master's thesis on the topic of the organization's strategic plan and this course of study was sponsored by the company. Thus, training on and knowledge of the 'Balanced Scorecard' in particular, seems to have contributed to the adoption of the organization's own performance measurement system, even though this is not formally written.

Furthermore, Case A would be willing to implement a more elaborate and explicit performance measurement system if this was carried out by outside consultant, according to the Human Resources Manager. Due to time and people constraints, many of the managers expressed favorable attitudes towards the use of outside assistance in developing such a project. Thus, human capital is very important for the organization to design and implement a proper performance measurement system.

5.2.4.3 Overview of Case A's Organizational Culture

There is an emphasis on family values in Case A and the organization culture reflects this. The Managing Director claims that he can recall the names of all seventy one staff members and there are open channels of communication between him and his staff. The communication is partly facilitated by the company's Information Technology (IT) infrastructure. Mr. A5 commented on this openness saying, *'It is quite easy for us to approach him. For example if we need him to make certain decision that is beyond our power, we will contact him through phone'*. The Managing Director recommends clear boundaries between home and work life for his staff, encouraging them to leave personal matters at home and work issues in the office.

The importance of teamwork is stressed and the Managing Director claims that nobody in the firm can claim to be more productive than the others. Ms A6 suggested that this focus is effective in making workers feel good in their roles and encourages them not to be selfish when training junior members of staff. Ms A3 showed her agreement on the importance of teamwork, pointing out that her department needs the support of other departments in submitting their monthly reports on time so that she can prepare the overall monthly report for the M.D. This belief in teamwork is also evidenced by the fact that contribution to teamwork is one of the criteria used to appraise staff performance.

One interviewee did raise a negative point in relation to Case A's culture and this was an unwillingness to initiate change. Ms. A6 claimed that some managers are not proactive in improving systems such as the workflow and the standard operation procedures. She had noticed that the department she had transferred into had been using the same system since the company was established. She had consulted each officer about their work and procedures and was using the findings to amend the systems and improve their efficiency.

The team-oriented organization of Case A has created a positive environment for managers and their subordinates to produce a comprehensive annual budget and strategic planning activities. The objectives of each department are set by the Head of Department in consultation with the subordinates and the management team. Each employee is assigned targets to achieve and this is reviewed quarterly.

Besides this, innovative work processes are being explored and introduced by the managers generally and in particular by the Business Operations Manager. The latter continues to explore innovative ways to accomplish any of her subordinates' tasks in order to make their work processes more efficient and more effective. Old procedures have been replaced by new, taking into account comments made by the subordinates. This has helped to improve the overall work process and thus in turn helped the organization to identify key strategic processes. Therefore, innovation and the teamwork culture have helped the organization to properly identify key performance indicators.

5.2.4.4 Overview of Case A's Organization Strategy

The main strategy adopted by the company is focus strategy and this is developed by the management team. The Managing Director stated, *'you have to draft and know where you are going..... You have to be sure of where you going to have the company because we are not having the company for one or two years'*. Mr. A9 mentioned that the company is clear about which market segment they want to concentrate on. The company has both a short- and long-term focus and the M.D. explained that the mission and vision for the company is incorporated into their five-year plan. Company performance is reviewed every 3 months,

when it is compared with the previous year and with the budgeted profit. The company is also keen to look at its competitiveness in terms of the 'Mudabarah' (Islamic Insurance Product) profit-sharing scheme. The M.D. commented, *'So you have to have business intelligence or sort of investigation on why your products are not attractive'*. He claims that through this business intelligence, they know what rival companies are offering.

Within the departments though, there does not seem to be a formally written mission, nor visions and objectives. One manager felt that each department should have this but he also said that he conveys the requirements of top management to his subordinates, breaking the information down into a suitable message for the staff.

At an operational level, it is the responsibility of Mr. A8 in the Business Development Department to deliver products that will be attractive to customers. These are then evaluated by the relevant departmental managers. Mr. A5 explained, *'we have to look at the complexity of the product in terms of customer knowledge and services. If the product proved to be difficult to offer, operationally, then it will be changed until it is simpler for the counter staff to sell it.'*

The company is keen to ensure that their products are right for their customers. The strategic channels of distribution developed since 2006 are there to ensure easy access for the public. Mr. A8 stated that, occasionally, they have to be creative to fulfill customers' requests. They will incorporate value-added services to make products more attractive, such as the 24-hour towing service, which is free-of-charge up to 3 times.

Case A also wants customers to understand the policy they have bought to avert the possibility of misunderstanding or even conflict in the future. Most managers confirmed how important it is for the front-liner to take their time explaining the policy when the customer signs up for the insurance coverage. The members of staff are also encouraged to help customers restructure their policy to make premiums affordable to avoid a high number of policy surrenders. Mr. A8 says that the target customer retention figure is 85 per cent. The company is very conscious of its reputation but deals with issues that might affect this on a case-by-case basis. The M.D. offered the example of a complaint written to the main local newspaper, which the company handled by contacting the complainant directly. Another area that has the potential to affect the company's reputation is the rejection of a client's claim. Mr. A9, Head of the Claims Department, put forward the opinion that the claims process needs to be reviewed.

Even though the managers admitted that they do not have explicitly documented formal objectives at departmental level, the objectives that exist are made known to their subordinates through regular informal meetings. The subordinates know what their

managers want and what the organization requires from them.

The five-year strategic plan, annual budget and quarterly meeting practices indicate that Case A has its own objectives. The objectives are translated into their daily operations in order to achieve the targets set for them. In addition, when the targets are not achieved, the management will review their strategy and then amend the targets based on new information gathered about the external market conditions.

The decision taken by the M.D. to adopt a focus strategy also assists the Heads of Department to concentrate on their main strength in achieving the annual targets. Thus, organizational strategy does influence the adoption of a performance measurement system in Case A.

5.2.4.5 Overview of Case A's Management Style

Communication within the company follows its hierarchical structure. Staff at lower levels will channel their concerns and ideas to their supervisors, who will then pass these on to the Heads of Department. The M.D. encourages discussion among the managers, prompting them to analyze and resolve problems. If a decision is likely to affect the organization as a whole, the M.D. will be consulted for his opinion. Ms A3 claims that the M.D. gets involved in setting staff targets. He visits each department to look around and ask questions. The M.D. worked for a Japanese company that applied an open management approach and this experience has informed his management style. He says of his staff, *'They can also come to me, don't have to make appointment.... I don't have secretary actually.... I welcome challenges, or question from everybody. It's good thing that they ask for clarification. So it's a good thing not to limit personnel curiosity, I try to be open to all the managers, not to give surprises. So everybody knows'*. In addition, he believes that all of his work is an 'Ibadah' (the act of following Islamic beliefs and practices).

A monthly report is submitted to the M.D. and the company holds quarterly meetings in which issues arising may be discussed by the whole management team. Within each department though, there is no formal timetable for meetings rather they are held on an ad hoc basis, depending on the requirements of the individual manager. At such meetings, staff can raise any issue pertaining to their work. Meetings with agents are also held on an informal basis, with either the officer-in-charge visiting the agent's office, or vice versa.

The majority of managers encourage an open table for staff to come forward to discuss any issues. Ms A3 mentioned that she tries her best to listen to all of her subordinates. It is her method to trial a particular task before asking any of her officers to do it. This is so she can understand the performance of the procedure and make sure her staff understands the

workflow.

Matters of employee discipline are handled professionally and individuals are required to come for a consultation before any disciplinary action is taken against them. If the consultation process fails, this will affect the employee's annual performance appraisal. Their work will be monitored for further action.

The management practice of holding formal or informal meetings with subordinates has created a consistent reporting culture on the question of performance. This regular check by Heads of Department helps to ensure that the subordinates are able to accomplish their set targets and allows problems to be solved quickly.

5.2.4.6 Overview of Case A's Information Technology

Everyone in the company, from the M.D. to the drivers, has access to a personal computer (P.C.), through which they can take advantage of MSN and email. There are, of course, limitations on access. Not all staff members may access the web page and junior officers cannot access customers' information without supervisor approval.

In terms of the accounting system, the compilation of the account is linked from back to front office and, whatever the transaction, it must be entered into the system. However, not all the systems are electronically-automated. In the Agency Department, manual systems are used to organize workflow so an officer will need to visit the desk of a colleague to check the stage of a claims process. The company's agents are not linked to the system and so cannot enter their clients' information. The agents are given a deadline of one month to submit the carbon notes for their sales. These are recorded manually. The advantage of this is the transparency it offers in terms of awareness of the workload involved in the process. The drawback is that the information is only available within the Agency Department as only information entered into the system can be accessed across departments. The Business Operations Manager, for example, will be unable to know the detail of each transaction but will still be able to see the total premium.

Another disadvantage of these manual operations is that it means not all information can be accessed immediately. The actual figures on debtors can only be retrieved with two weeks' notice. This lag of information retrieval also affects the information reaching the M.D. The actual performance of the company can only be reported a month in arrears. Other factors that contribute to information lags are system breakdown and excessive workload. Factors limiting the accessibility of the system are the confidentiality of client records and the high cost of linking agents into the system.

Case A does not participate in the information-sharing that conventional insurers use to make bad-risk clients known. As a result, Mr. A9 of the Claims Department explains, they are unable to differentiate between good and bad drivers and charge different premiums accordingly. Also, 80 per cent of claims are made over the counter and the rest are from their appointed workshops. This contrasts with other countries, where claims can be made online.

It is clear that the current system is not without problems. The Business Operations Manager believes that the main purpose of the system is to help them complete their tasks but one of her senior officers, Ms A10 claims that it always has problems and sometimes will not even accept data entry. Mr. A5 stated of the system, *'It serves the purpose but we can do better if we have better system'*. The company therefore needs a new system more tailored to fulfilling their specific requirements.

The lack of real-time data affects the effectiveness of Case A's performance measurement system. The current informal system could be further improved by greater investment in information technology in order to ensure proper implementation. Lack of information technology also hinders access to data throughout the organization. The manual data collection that is currently practiced takes time to process. Therefore, further investment is important if Case A wants up-to-date data to drive their competitiveness.

5.2.4.7 Newly-Identified Influencing Factors

The participants considered other factors, both external and internal, as having an influence on the adoption of a performance measurement system. These included community services, environmental change and government rules and regulations.

For example, the company is required to submit a performance report to the Ministry of Finance on the 22nd of every month while other administrative matters such as the appointment of agents or the introduction of new products also need government approval. In addition, the banks that represent Case A also set targets which the company have to abide by. External service providers, such as the 24-hour towing service and channels of distribution involving the agents, must also be monitored.

Another influence mentioned was changes in market trend and the external environment. The company is vigilant and notes any changes in the annual report, so they can be incorporated when setting future targets. For example, Ms A4 said that, *'because this thing become a trend right.... Maybe due to financial control on card credit, after that, when credit card was controlled, every bank now offers this type of financing facility'*. Additionally, in meeting the needs of their stakeholders, the company needs to monitor whether they have

achieved their objectives in terms of social responsibility. The M.D. emphasized community services like road safety awareness campaigns and religious activities as means of getting closer to the community.

Internally, the existence of well-established work processes and workflow have helped the company to establish Key Performance Indicator (KPI) for officers to achieve. According to the Finance Manager, her workers know the procedure for processing an application by heart and, if the workflow is followed properly, it should be completed within ten to fifteen minutes. However, this efficiency is not found in all departments. The lack of guidelines in the Claims Department has resulted in overpayment of claims, for instance.

5.2.5 Summary

From what could be gathered from the field study, the primary factor influencing the adoption of a performance measurement system is the open channel of communication the company enjoys. The Heads of Department follow the lead of the Managing Director in this. The effect on the organization's culture is positive, encouraging teamwork and an understanding of how people's jobs are connected. The lack of interference from the Board is also a positive factor. Their interest in return on investment does not translate into an influence on the operational targets of the organization.

The focus strategy practiced by the management contributes to a consistent understanding of the targets at every level up to the corporate and ensures the direction of the organization is clear. In addition, the keen focus on training means that senior personnel have been exposed to management concepts and most have an understanding of the terms *performance measurement system* and *balanced scorecard*. In fact, during the second interview with the Human Resources Manager, she informed the researcher that managers have been invited to an overseas seminar on performance measurement systems.

Although use of IT is already quite high, the managers believe that further investment in this area would lead to increased productivity and consequent meeting of targets. There are problems of accessibility and lack of timeliness in terms of information reaching the M.D. At present, IT is having a negative effect on the firm's ability to measure performance.

All of the six conceptualized factors have an influence on the adoption of performance measurement in this organization but there are two other influencing factors; the existence of work processes and external forces. Clear workflow with prescribed guidelines encourages target-setting and makes monitoring possible. The interests of external stakeholders ensure the firm prepares reports on its activities and targets.

Table 28. Summary of factors influence PMS adoption in Case A

Factors	Findings
Corporate Governance	The owner is involved in both in the strategy and operation as well, e.g. approval of new products
Human Capital	Training and career progression
Organizational Culture	Respect
Organization Strategy	Product focus
Management Style	Flexible
Information Technologies	Low IT usage with highly complex IT but low IT investment
External Stakeholders	Market trends, regulators, external channels of distribution (6 participants)
Existence of Work Process	They have implemented work processes and work flow for the staff to follow; improvement of the workflow taking into account employees' feedback is currently in progress. They see work processes and systems as important aspects for the running of the business. Nevertheless, one department is still lacking S.O.P., with the Head admitting that he is incapable of developing a manual for the staff. (7 participants)

5.3 Case B Performance Measurement System

5.3.1 Introduction

Case B was established in 1993 with the initial aim of catering specifically to the needs of Brunei Hajj pilgrims travelling to Makkah. The company was chosen for this case study because it has managed to turn around its business from a loss-making travel and tours organization into a profit-making outfit with the implementation of a five-year strategic plan. At the time of the interview, the company was preparing their second round of five-year strategic planning i.e. for 2011-2015. A memo has been circulated to relevant Heads of Department for action (see Appendix 16). Additionally, the M.D. received a 'most promising entrepreneur' award in 2009. Besides that, the company also received the 'New Millennium Award' in 2011 presented at the 36th International Award for the Tourist, Hotel and Catering Industry in Madrid, Spain.

The vision and mission statements as well as the goals and objectives of the company as indicated in the first five-year strategic plan are shown below.

Vision Statement

'Over the next 5 to 10 years, Case B, aims to become one of the leading HAJ and UMRAH service provider and TRAVEL and TOUR operators in the Asia Pacific Region'

Mission Statement

'To continuously provide quality products and excellent service with the guidance from Allah'

Goals

Case B will emphasize on increasing its business growth through the following:

- Establish a business network and become the preferred General Sales and Agent (GSA) for Hajj and Umrah services in the Asia Pacific Region.
- Maintain a high standard of quality in its products and services.
- Achieve a fair return on equity and investment.
- Ensure proper well-organized management systems that suit current and future environment.
- Continuously enhance and diversify its products and services offered.

Objectives

- Become a ONE-STOP agency offering business and leisure travel services as well as Hajj and Umrah services.
- To make a business presence in selected ASEAN and subsequently Asia-Pacific countries.
- Offer competitive travelling and tour packages and deliver quality service with superior and competitive values.
- Have a continuous marketing drive in place including customer retention programs and to increase visibility through a broader recognition of quality brand in offering a quality customer service.

5.3.2 Profiles of Interviewees

At the time of the study, the company consisted of eighteen employees. The company comprises a Managing Director, Heads of Departments, Senior Executive Officers, Executive Officers and clerks. Interviews were conducted with the Managing Director, Mr. B1, three Heads of Departments and two Senior Officers. These Heads of Department and Senior Officers were chosen by the Managing Director because they have been involved in setting the annual budget and thus the firm's performance measurement system. Interviews were conducted with each participant individually in their own office.

- (i) Mr B1 is the Managing Director of the company. At the time of the interview, he had been working with the company for more than twenty years and report

directly to the board members. He was appointed as acting M.D. in 2004 and the position was confirmed in 2007.

- (ii) Ms B2 is the Assistant Managing Director of the company. She also handles finance and the Hajj and Umrah (pilgrimage to Makkah, Saudi Arabia) managerial position due to the lack of qualified people to take up the post.
- (iii) Mr B3 is the Head of Department for Corporate and Human Resources. He is also responsible for the administration of the company.
- (iv) Ms B4 is the Head of Department for Travel and Tours. She handles the travel and tours operations.
- (v) Mr B5 is a Senior Officer for the Hajj and Umrah Department. He reports directly to the Assistant Managing Director. He handles the Hajj and Umrah packages for Muslim pilgrims to Makkah.
- (vi) Mr B6 is a Senior Officer in the Finance Department. He also reports directly to the Assistant Managing Director. He handles the preparation and reporting of the financial statements of the company.

5.3.3 Overview of Case B' PMS

The performance measurement system of Case B has a strong financial focus. The main objective of the five-year strategic plan (2006-2010) was to monitor and control costs and thus eventually turn the fortunes of the company around. Their first formal performance measurement activity was carried out in 2006 and was a joint exercise with an external consultancy firm.

Since then, cost control has remained their main objective. This focus affects their management style and accounting standard operating procedures. These procedures were introduced and implemented informally by the then Finance Manager, Miss B2. This was to ensure that the company achieved the objectives stated in the five-year strategic plan. The introduction of the SOPs has influenced the management structure and now all managers are answerable to the Finance Manager/Assistant M.D. Submission of a monthly report to the Assistant M.D. is a requirement of all managers. She will then perform a variance analysis report to compare the actual with the budgeted figures. The Assistant M.D. then reviews the performance of the profit centers, i.e. Travel & Tours and the Hajj & Umrah Departments. A monthly report is also required from the two hotels in Saudi Arabia that the company operates.

Management meetings at which all Heads of Department and the Assistant M.D. are present are held quarterly. The purpose of these meetings is to discuss performance. Thus, the M.D. will only be formally notified about the performance of the company on a quarterly basis. However, the M.D. can request a copy of the monthly report from the Assistant M.D.

During the quarterly meetings, targets are reviewed where necessary. If certain targets have not been met in one quarter, they will be increased for the following quarters. Since the implementation of the five-year strategic plan and the recruitment of Ms. B2, the Finance Manager/Assistant M.D., the financial performance has improved. Only in 2009 did their sales fall drastically and this was as a result of an exceptional circumstance, the SARS flu epidemic that affected the travel industry worldwide. However, even in this situation the company still managed to make a profit in that year.

The targets have been developed based on the objectives of the company and so financial procedures were informally introduced to achieve their five-year strategic plan. The need to monitor business processes such as the Hajj and Umrah tick list also influenced the development of procedures. This tick list provides the employees with guidelines on the processes they need to follow in handling the pilgrims before, during and after they have performed their pilgrimage to Makkah. Regardless of this, the targets were set with little or no consultation with the employees.

Case B's current performance measurement system is not really accountable. Even though the targets at the lower level are aligned to the overall strategy of the company, the opinions and knowledge of staff members were not taken into account in the development of the system. Heads of Department are assigned full responsibility for the achievement of targets set but the rules and requirements of external parties, in particular the Brunei Government Hajj Department in the Ministry of Religious Affairs (MORA) have to be taken into account in this process.

In terms of the flexibility of the performance measurement system, it does not rate highly. This is mainly due to the strict control of the Assistant M.D. on the measurements. Any changes need to go through her. The performance measurement system itself is not clearly visible to staff members. Most of the targets, especially those for the business process, have been introduced in an informal manner and are still at the trial stage.

The performance measurement system is partly linked to other management systems such as the finance and human resource reward system. However, due to lack of investment in information technology, it is not possible to link the system completely. Furthermore, the current performance measurement system itself is not comprehensive.

The performance measurement system of Case B is illustrated in the following figure. It shows the origins of targets, target reviews, target evaluation and how the targets link individuals within the organization.

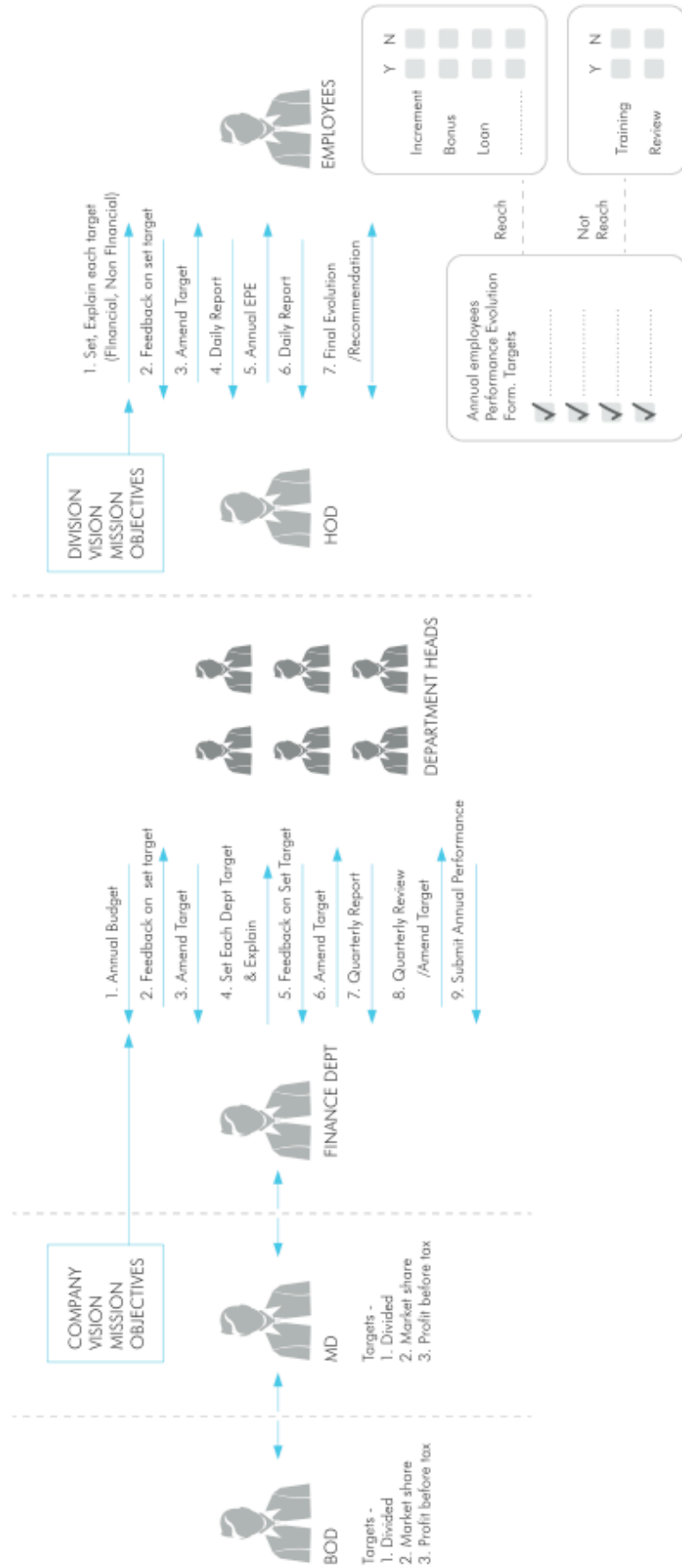


Figure 38. Flow diagram illustrating development of key performance measures in Case B

5.3.4 Identifying the factors influencing PMS adoption

5.3.4.1 Overview of Case B's Corporate Governance

The management of Case B is governed by its Board of Directors, which is made up of top officials from government as well as business people. The appointment of members from the private sector was implemented in 2003/2004. In comparison with Case A, the Board of Case B has greater involvement in the strategic development of the company. All proposal made by the management must be endorsed by the board and, on occasion, the board will put forward suggestions or opinions on a matter and sometimes these might be taken up. The M.D. believes the involvement of the Board can delay the decision-making process. Nevertheless, the board does not get involved in the operational activities of the company.

Usually, Case B annual budget will be reviewed by the management team before it is submitted to the Board of Directors. The procedure is the same for reporting the annual performance review also. In addition, the management team has its own quarterly management meeting to evaluate the quarterly performance. If targets have not been met by each department, new strategies will be formulated and new targets will be set and agreed. This is particularly true for financial targets.

In summary, the Board of Directors only requires the management team to submit the annual report. Meanwhile the M.D. will require quarterly reports from the Finance Manager and a meeting will be held to discuss the compiled financial report.

Case B' reporting structure encourages the M.D. and his team to come up with the annual targets to be approved by the Board of Directors. With the existence of the hierarchical reporting structure, targets are set accordingly in order for the management team to be in line with the company mission and vision which is stated in the five year strategic plan book.

5.3.4.2 Overview of Case B's Human Capital

In recent years, the importance of human capital has been acknowledged by the management. In their attempt to turn the company round, they implemented a five year plan. The company realized that the success of this would depend on bringing in new and experienced people, the first being an experienced accountant. In addition, a more experienced travel and tour manager was employed to promote that sector of the company. According to the Human Resources Manager, Mr. B3, *'No matter how brilliant your plan is but if you do not have the right combination of people to execute to do the work.....'* He further added that, in terms of recruitment, the company would not just get the best they could, but would try as much as possible not to compromise any key position. This explains

why, at the time of the fieldwork, the company had two vacant managerial positions, that of Finance Manager and of Hajj and Umrah Manager. Both of these positions are currently handled by the Assistant M.D.

Case B, however, is less able than Case A to commit to providing systematic staff training. The Assistant M.D. explained that, while there is a budget for training, either local or overseas, the high workload and shortage of staff means that the training itself is often postponed. The company therefore endeavors to carry out on-the-job training, for example in 'double-entry book-keeping' in the Finance Department. There are also some generic courses available to the top management to improve their knowledge. The purpose of training is to make improvements in the officers' daily tasks and Heads of Department will recommend staff members and the training will then be facilitated by the Human Resources Department. Not all officers are completely behind training though. Ms B4 pointed out that, while it can improve her officers' skills, it cannot solve problems such as laziness.

The company provides a job description for each member of staff and, based on this, employees are given targets to achieve. Mr. B3 described the system thus, *'First six month we review it see how they perform, if okay then we monitor for the next following six month if not okay so we need to renew it , whether we need to retrain, training, whether we need to give personal one to one'*.

The Assistant M.D. is a certified accountant who used to work in DST, a major telecommunications company in Brunei. Her work experience and educational background have contributed to the achievement of Case B's annual targets. As mentioned earlier, the company's five year strategic plan was developed by a consultancy firm. The Assistant M.D. only joined the firm towards the end of the completion of the report, at which point she was asked to review its financial aspects.

The human capital investment activities have encouraged the adoption of a performance measurement system in Case B. Investment in external consultancy to develop their five-year strategic plan has jump-started their initiative to measure their performance. However, based on the interviews and observations, the development of their first five-year strategic plan might not have been successfully implemented and achieved without the determination and commitment of the Assistant M.D. to reach the stated objectives. This success is also tied to her strict management style, which pushes everybody to follow new procedures and achieve their targets. As the Assistant M.D. herself stated, most of the five-year strategic plan objectives have been fulfilled.

5.3.4.3 Overview of Case B's Organizational Culture

In contrast with the other case study companies, cooperation between departments seems to be lacking in this organization. The Senior Finance Officer, Mr. B6 claims that, *'Even though one or two departments are reluctant to cooperate.....Some people still holding some information'*. It seems that explicit instruction from the Assistant Managing Director is necessary to prompt this kind of communication. This may be the result of a lingering public servant mindset among the officers. The Managing Director, Mr. B1 said, *'Change is difficult. From previous management, have different style. The new management also different, adaptation is a bit difficult'*.

Within individual departments though, the situation may be better. In the Hajj and Umrah Department, the Senior Officer, Mr. B5 said, *'It's for our services. This is for the team..... so work for our team. Make sure we give good service available'*.

Several of the officers interviewed spoke about how the attitude of many of the staff members presents difficulties in relation to implementing change in the company. The Assistant Managing Director herself envisages resistance from the officers. For example, when asked what she foresees if they want to implement their own scorecard, her response was, *'Maybe culture resistance.... Because BSC has four section right.... Customer, internal, learning process flow and financial.... So, I would foresee, all these four has to be in all department..... So they will be in culture shock like finance, they will be shock and say, 'we don't know anything about finance'*. This in turn makes it difficult for the management, and especially for the Assistant Managing Director, to introduce a full set of performance measurements. Mr. B6 talked about the new accounting system 'powersuit', which links the front office to the back office, and was supposed to reduce time spent on processing transactions. He claimed that, due to the officers' reluctance to learn, he now spends more time correcting the mistakes made by the front-counter staff.

Based on the interviews with the managers from different departments, there seems to be lack of understanding and teamwork among the management team. The Assistant M.D. received heavy criticism for her strict financial operation procedures and the majority of Heads of Department claimed that they did not feel respected by this person. The Assistant M.D. herself does not see her own M.D. as a good leader for the organization. The only thing that keeps all Heads of Department properly focused is the existence of the annual performance evaluation, in which they will be evaluated by the Assistant M.D.

Nevertheless, within departments a teamwork culture among the employees could be seen. Every employee needs to do their part of the job for the whole process to run smoothly. For example, a Hajj and Umrah committee will need to work in a team to ensure their clients'

needs are fulfilled, starting with the acceptance of money and continuing until the pilgrims return to Brunei.

5.3.4.4 Overview of Case B's Organization Strategy

The company implemented its first five-year plan in 2003/2004, the main objective of which was to improve its financial position. Each department prepares an annual budget based on expected activities. The Assistant M.D., who is also the Acting Head of Finance, makes a projection to check overall feasibility. To ensure they achieve the budget set for the year, the management holds quarterly meetings in which actual sales are compared with budgeted sales. This permits the Assistant M.D. to review the budget and targets for the following quarter to guarantee the company stays on track. Reports are required from each department for these meetings.

Case B is the number one choice in the country for Hajj and Umrah packages and most of the efforts of the organization are dedicated to these. It can be said that there is a product focus strategy in operation. Unfortunately, there is a public perception that prices do not compare favorably with those of competitors. Nevertheless, this sector of the travel industry is the area that they want to focus on. As mentioned in The Report: Brunei Darussalam (70:2008), *'It is also estimated that the Islamic tourism sub-sector alone will generate around 1% of the world's GDP. The Middle East and East Asia lead the pack in term of Islamic tourism and have the highest estimated annual growth rate of tourist visitors by region'*.

Despite efforts to penetrate the travel and tours sector, the company has not yet succeeded because of a reluctance to compete on cost. Ms B4, the Travel and Tours Manager, said they needed to be more pro-active and offer something different to break into this market. From time to time the company has endeavored to improve the product with the aim of retaining customers and they have created a lower-end package to attract less wealthy customers. They have thus applied market segmentation to cater to different budgets.

There is also a strategic partnership with Club Med and targets have been set for this. Nevertheless, the company seems to be rather lacking in terms of marketing activity compared to competitors. Mr. B5 conducted some market research and found that other firms marketed their products more aggressively. This could be the result of a lack of clear instruction from the M.D., who is responsible for all marketing activities.

The Assistant M.D. emphasizes a cost control and reduction strategy. Controlling cost by implementing a standard accounting operating procedure has improved the financial standing of the company during the past five years. Accounting standard operation

procedures were implemented by the Assistant M.D. (AMD) at every level of operations to ensure that every transaction is cross-checked and verified by the authorized person.

Moreover, focusing on high quality Hajj and Umrah services has made Case B the most trusted agent in the country. Therefore, the product and cost focus strategy practiced by the organization has led to the development of more focused performance measurement. The company objective of turning from loss to profit has been achieved through the implementation of their five-year strategic plan. Costs are properly monitored and controlled and existing market segments have been strengthened through quality control and the use of proper standard operating procedures.

5.3.4.5 Overview of Case B's Management Style

This organization also places emphasis on a hierarchical chain of communication. Unlike the Case A company, where the M.D. claims to have an open door, in Case B nobody is allowed to go over the head of their superior. Mr. B3, the Head of the Human Resource Department, said, *'I used to have an issue with that, my staff to go over me or not to go through me and so on. So I say it openly, I am open, but whatever it is , you have your officer and Executive officer (EO), I give the respect to the EO but I still give them the opportunity, to see whether the EO are performing well'*.

There is a feeling that two-way communication between management and officers is lacking. One senior officer claimed that the management likes to criticize their immediate subordinates while they themselves are not open to criticism. It was also suggested that the management is often biased and practices favoritism. One officer also commented on the way that new procedures are presented as a *fait accompli*, with no prior consultation. This could be the result of the hangover from the public service mindset that characterized the company prior to the change of structure to the private sector.

The M.D. chairs management committee meetings in which recommendations from the Heads of Department are presented for brainstorming. If a new product is to be introduced, for example, issues such as how they want to promote the product, what they need to achieve and who will be involved will be discussed. In addition, the committee discusses the performance of each department for the relevant period. Departmental meetings are held at the individual manager's discretion. In the HR Department though, the arrangement for meetings is more formalized and they endeavor to hold a weekly meeting.

Generally, the lack of two-way communication between the managers and their subordinates affects the development and implementation of proper measures and targets. Targets are set at the top managerial level with little consultation with those affected by the targets and

this does affect the adoption of the performance measurement system. It seems that the only reason behind the success of the company in achieving its objectives is due to the presence of a very strict Assistant M.D. who has introduced tight cost control and high targets for everybody in the organization.

5.3.4.6 Overview of Case B's Information Technology

The only automated system in the organization is the Abacus System, linking the Travel and Tours, Hajj and Umrah and Finance Departments. Information from other departments has to be accessed manually. Monitoring of target achievement is done manually through the quarterly meetings.

This has created some difficulties for the M.D. to acquire up-to-date information. Further investment in information technology will help the organization to have a more effective and responsive performance system.

5.3.4.7 Newly Identified Factors

The external factors notable for this firm are the changes in the travel industry seasons as targets are based on these. Comparisons are made on a quarterly basis to monitor trends in the industry. The company must ensure it understands the market it is operating in and that complies with the requirements of government bodies such as the Ministry of Finance (MOF), the Audit Department and the Minister of Religious Affairs.

The requirements of external parties like the Saudi government may have a detrimental effect on performance measurement. For example, the timescale for applying for travel visas will depend on the Saudi Embassy in Brunei and their rules and regulations keep changing. On occasion this can affect the company's operations as flights booked for customers may have to be cancelled.

Internally, corporate governance seems to have little influence on management's efforts to measure performance. The company does not have a work manual or SOPs, although a set of work processes exists. The culture is one of learning as you go along and, according to Mr. B3, the Human Resources Manager, the work processes are very unclear in terms of both documentation and chain of authority. Since 2010, there have been attempts to improve the situation. The Assistant M.D., Ms B2, mentioned her own attempts to improve the written policies and procedures so that officers can be well-prepared. While many of the tasks are fairly standard and known to employees, the M.D. did admit that the company is lacking in this area. He felt that too much depended on the knowledge of the current team of officers.

5.3.5 Summary

The Assistant M.D. is the best-qualified and most knowledgeable person in Case B. She is (Association of Chartered Certified Accountants) A.C.C.A.-qualified and has vast industry experience and has turned the company into a profit-making firm. She sees that the organization is not ready for change and there is resistance to the introduction of new procedures. The government-oriented culture established when the company was set up still prevails. Consequently, her management style is strict and oriented towards cost control. On the recommendation of the public auditor, she has introduced new paperwork through which the activities of her employees can be tracked. The strict management practiced by the Assistant M.D. is the greatest influence in helping the company to achieve its targets.

Table 29. Summary of factors influencing PMS adoption in Case B

Factors	Findings
Corporate Governance	The owner is involved in some of the operations e.g. approval of new products/services but less involved in the strategy (only for approval).
Human Capital	Lack of training due to shortage of employees.
Organizational Culture	Outcome-oriented.
Organization Strategy	Product and cost focus.
Management Style	Rules-oriented.
Information Technologies	Medium IT usage, highly complex IT and high IT investment but most of this is linked to the Finance Department.
External Stakeholders	Market trends; regulators (M.O.F. and M.O.R.A.); visa approval (other governments). (5 participants)
Existence of Work Process	They are still lacking in SOPs and there is no manual available for the staff to refer to. It is all based on experience. New staff will either bring their experience from their previous work or learn from the current employees. Nevertheless, they are slowly implementing some work process and work flow for the staff to follow. Regardless of this, no feedback or comments from the employees were taken into account in designing the work process. They see work process and system as important aspects for the running of the business. Nonetheless, the initiative of developing the work process is still a one-person show with the acting G.M. being indirectly responsible for transforming the company into a profit-making company. (5 participants)

5.4 Case C Performance Measurement System

5.4.1 Introduction

Case C was chosen as a case study because the company has managed to expand their business from a two-man company into a much bigger outfit within a twelve years period. Case C was founded in 1997 to provide an education consultancy service and offer training. In 2010, the co-owner, Ms C1 was awarded a 'Most Promising Entrepreneur' award in the Asia Pacific Entrepreneurship Awards.

The aims of the company indicated in the company profile are listed below:

- to build human skills through education;
- to develop strategic partnerships between local and overseas institutions, which will assist Brunei in developing its education capabilities to meet the country's training needs.

5.4.2 Profiles of Interviewees

At the time of the study, the company consisted of eleven employees. They comprised the Managing Director, General Manager, Education Counselors, Admission Coordinators and General clerks. Interviews were conducted with the Managing Director, Ms C1; the General Manager, Dr. C2, and five Education Counselors and Admissions coordinators. These Education Counselors and Admission coordinators were chosen by the General Manager because they are directly involved with students and in the standard procedures of the company. Interviews were conducted with each participant individually in their respective offices.

- (i) Ms. C1 is the Managing Director of the company. She is a co-owner of the business.
- (ii) Dr. C2 is the General Manager (GM) and Operation Manager (OM) of the company. She took over the daily operations of the company from the Managing Director when she joined the company.
- (iii) Ms. C3 is the Head of the Finance and Admission Coordinator for Postgraduates. However, she is also involved in counselling students with regard to their applications.
- (iv) Ms. C4 is an Admission Coordinator for Undergraduates who has been with the company since it started.
- (v) Ms. C5 is an Education Counsellor. She mostly handles the Malaysian universities.

- (vi) Ms. C6 is an Education Counsellor. She handles United Kingdom (U.K) universities.
- (vii) Ms. C7 is an Education Counsellor. She handles Australian universities.

5.4.3 Overview of Case C's PMS

There is no formal five-year strategic plan or annual budget exercise in Case C although the company does have a set of objectives which aim to build human skills through education and to develop strategic partnerships between local and overseas institutions. The Managing Director's priority is to provide a good quality service to the students that come to Case C seeking advice and support in choosing their university placement.

Given this focus on quality of service, no financial targets to aim for are presented to the General Manager, Dr. C2. She stated that the important thing is to provide equal opportunity for consultation to all students regardless of whether they guarantee to go through Case C in obtaining their university placement.

The only measurements of performance that exists in Case C is the student tracking system and the exhibitors' survey (see Appendix 17). The student tracking system is used to monitor the application process of students to any particular overseas universities. However, this is still done manually, which means everybody needs to be alert in checking the status of the students.

The performance measurement system of Case C is illustrated in the following figure. It shows the origins of targets, target reviews, target evaluation and how the targets links individuals within the organization.

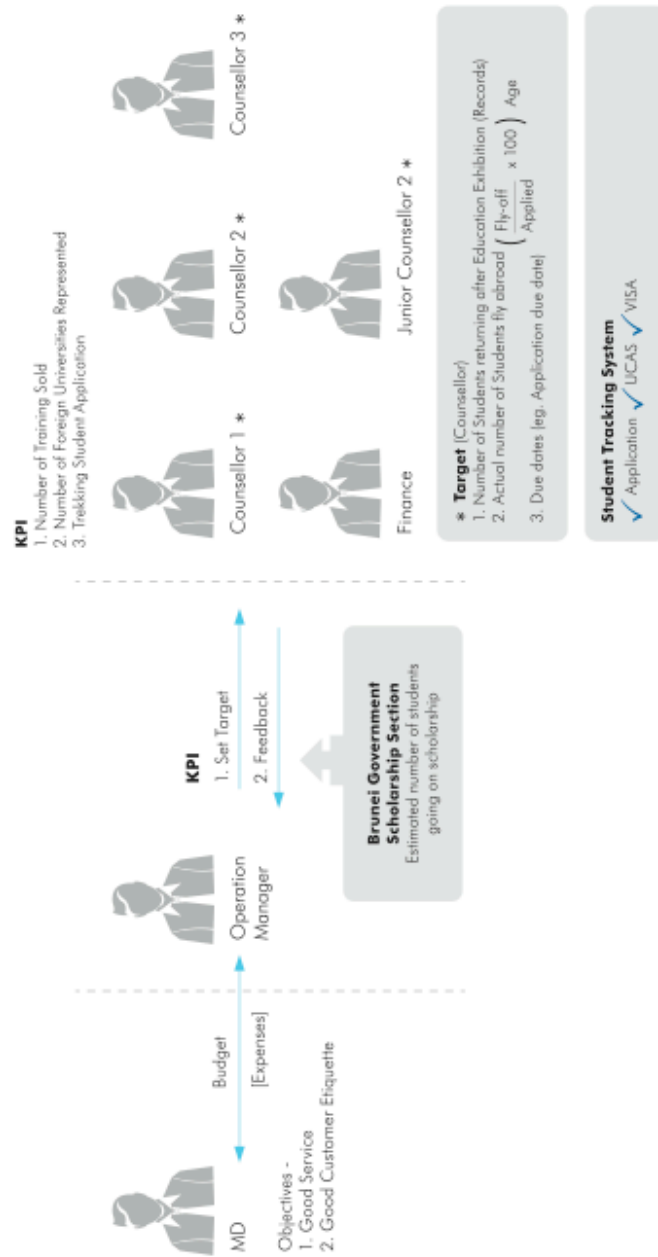


Figure 39. Flow diagram illustrating development of key performance measures in Case C

5.4.4 Identifying the factors influencing PMS adoption

5.4.4.1 Overview of Case C's Corporate Governance

Case C differs from the first two case study companies in that it is privately owned. There are two main shareholders, who are sisters-in-law. One shareholder is active in the company and partially involved in the daily operations, depending on the managers' needs. As Ms C7, one of the Education Counselors said, *'Hjh joins the meeting on many occasions but not always. Depending on her as well whether there is an issue that is relevant to that level or..., if it's just a small... operation thing, they're not.'* The other shareholder does not get involved in the decision-making process. As there is a family relationship, the active shareholder reports to her partner informally, for example, in the home.

The overall responsibility for the daily running of the company lies with the Operations Manager, Dr. C2, and the staff report to her.

The M.D. does not require any formal reports from her General Manager. Meetings with the M.D. are held on an informal basis. C1 gives total independence to the G.M. in the daily operation of the company, only requiring the latter to update her on matters such as progress on upcoming education exhibitions and new arrangement with overseas institutions.

Basically, everybody under Dr. C2 is answerable to her and reports to her only. The employees are not separated into different departments but rather work together as one team. Dr. C2 will talk in an informal manner with each one of her subordinates, enquiring about the progress of their work. Due to the small number of employees, the G.M. does not feel the need to have a regular meeting. Mostly meetings will only be held if there is a real necessity for this, such as to check on the progress of an upcoming project or exhibition. As a result of the family-like management structure, no formal reporting is required from or by the General Manager. This lack of formal reporting activities contributes to the lack of formal measurement activities.

5.4.4.2 Overview of Case C's Human Capital

This is a smaller company than the other case studies. Nevertheless, it has seen a significant increase in staff numbers, especially in Education Counselors, since the company expanded its business into the U.K. sector. The company began as a two-person show but there are now more than ten members of staff.

Training is crucial to the success of the company. The employees need to provide a quality

service and this requires knowledge of the programs and enrolment procedures of the institutions they represent. The education establishments offer free training to their agents so Case C needs only to pay travel and accommodation costs. The Finance Manager explained that, *'Most of the agent workshop will be attended by our counselors. It does help, like updating about the courses. Update on new processes, payments. In the agent training, they will inform us on the new campus, new courses. Some of the agent never had been to UK, to see the real university'*.

As a result of this exposure, the Education Counselors are well-versed in what they are doing and well-qualified to advise students on education matters. Furthermore, the other non-counselor staff members are also trained to counsel the students effectively, especially during peak season. Ms C3 commented that everyone is able to multi-task and can cover each other's work in periods of absence. Consequently, it usually takes at least one year for a new employee to fully master all of their tasks. Ever since the company expanded its business into the United Kingdom sector, the number of Education Counselors has increased, making the company a much more substantial organization. In order to ensure the quality of the services they provide employees are sent overseas to higher education institutions to be exposed to the programs available at the institution they represent. The training focuses on knowledge of the programs and the requirements of enrolment. The institution will give free training to its agents so Case C only needs to pay the travel and accommodation costs of their staff according to the Finance Manager who stated, *'Most of the agent workshop will be attended by our counselors. It does help, like updating about the courses. Update on new processes, payments. In the agent training, they will inform us on the new campus, new courses. Some of the agent had never been to UK, to see the real university.'*

Whilst there is a focus on training, the organization is lacking in other areas such as Human Resources. There is no department to handle personnel issues. The size of the company prohibits a very complex organization structure and, as a consequence, there are no job descriptions provided for new employees nor is there an annual employee performance appraisal system. Dr C2 said, *'The staffs don't have job description at all. It really really is a small company. So if you told me to write up a job description of the staff, it's going to be quite hard because the boundaries are very loose.* In spite of this, it is felt that everybody knows their own role.

With regard to their performance measurement system, Case C lacks knowledge in this area. Ms C1 has a background as an Investment Analyst, while Dr. C2 graduated in Chemistry. Their management skills have been acquired through vast working experience in various institutions. Neither of them fully understands the term 'Balanced Scorecard'. However, they claim to know what performance measurement is.

Both the M.D. and the G.M. know that eventually the firm will need to invest time and money in developing a comprehensive performance measurement system to ensure proper control and monitoring of their activities. At the moment, it is more of a manual tracking system. Dr. C2 is still searching for external consultants who would be able to develop a proper performance measurement system for Case C. However, she has been advised by one consultant that the company does not need a comprehensive performance measurement system due to its size. Furthermore, it would be costly to bring in an external consultant.

5.4.4.3 Overview of Case C's Organization Culture

Despite a mix of nationalities – British, Australian, Malaysian, Singaporean, Bruneian and Filipino – working in the firm, the predominant culture remains Asian. Dr C2 commented on how this makes comment and criticism sensitive areas. The small number of employees means that everyone knows each other well, creating a very personal working environment. The impression received is that relationships are good and the staff work easily as a team.

There does not seem to be any conflict between the G.M., Dr C2, and her subordinates. All of the study participants valued her depth of knowledge and professionalism. Dr. C2 described the emphasis on teamwork, saying, *'each person has roles to play but then if one person, one person can't come in.... One thing we have done is that not one person is responsible per students. It's teamwork'*.

Having employees working in a team is good practice but given the local mindset, in which criticism is a sensitive issue, it is difficult to set targets. For example, no annual employee performance evaluation exercises are conducted in Case C. When asked why, one of the participants commented that she found it surprising because it had been common practice in her previous employment.

5.4.4.4 Overview of Case C's Organization Strategy

Given its size, it is not surprising that Case C does not have a five-year plan. Dr C2 states that the company has one basic objective, which is to provide an honest service helping Bruneians into the right programs. She also mentioned that the company aims to help with the training of Brunei's workforce. However, the finance manager was unsure of the company's objectives and even if they had a mission or vision. Some Education Counselors struggled to give an answer about this at all, although one, Ms C5, did support Dr C2's idea. It seems that not all members of staff have been made aware of Case C's objectives.

Since Dr. C2 joined the company as G.M., Case C has diversified its operations into universities Australia and the U.K. She believes the company is now the biggest market

player in Brunei in terms of the number of universities represented. By providing free education counseling, testimonial writing and access to computers and the internet, Case C can also claim that they are the best in terms of services offered.

Case C is selective about which overseas institutions it chooses to represent, thoroughly examining the quality of courses and the ranking of the university before accepting the appointment as agent. The company focuses on networking with foreign government bodies as well as with the government of Brunei. This is to ensure easy approval and recognition from the former and to guarantee a steady stream of students entering programs that will suit the needs of the latter. Ms C1, the M.D., explained that, *'because before these we are the ones that went out. But now they are coming to us and, 'can you give us assistance to our students, and then Shell has been using our service for I think 5 -6 years...Then, obviously M.O.E., then M.O.H., M.O.F. and even the Religious Affairs referring their students to us'.*

It is also vital that the company is proactive in dealing with students, calling them to remind them about registration and providing interviews with counselors before application forms are completed. One of the Education Counselors, Ms C6, said that some students make many return visits for advice and families return with their second and third children. To ensure there is public awareness of their activities, Case C also conducts presentations and interview sessions in schools. The firm carries out market research to find ways of attracting new students and keeps alert to changes in national policy and requirements. Ms C7 explained, *'if something is happening that we are aware of through, be through advertising in the paper, Sultan's speech, things happening in the country, education is going to this direction, they need to revamp or grow more rise, you know, so someone got to come in, so it's just means that certain things are unleash to the public such things as... a need or development or growth or whatever. Then we have the opportunity if the particular university has expertise in that area'.*

Following the announcement of Brunei's national budget in 2005, the company started looking into training as this seemed to be an area in which they could receive investment. There are public and corporate training courses in the pipeline. The company currently collaborates with the Malaysian Institute of Management (MIM) and the Malaysian Employers Federation as well as with universities and institutions in the UK and Australia, for short courses and training programs. The training section currently comprises only two members of staff and they are looking to involve their partner institutions in the provision of sessions.

The company endeavors to maintain a certain reputation and this policy forbids hard-selling. Both the M.D. and the G.M. place great emphasis on this. Dr C2 stated, *'We won't push*

them into applying in our university because we aren't looking at the dollar sign. If that program is not suitable to those students then we have to look at other one..... I think for them (the shareholders), the most important things are the reputation of the company is not damaged. That is her main concern'. Thus, reputation rather than profit is the priority of the company.

The implementation of various strategies in order to maintain their position at the top of the market appears to have been fruitful for Case C. However, there are no mechanisms that they can use to measure the success of those strategies or indeed to prove their claims of success. In effect, there is no mechanism for monitoring performance within the organization. The only indicators are such things as 'thank you notes' or gifts received from students that have been successful in obtaining their desired placement. Therefore, the implementation of various strategies does not mean that the organization has a proper performance measurement system in place. Nevertheless, the company does keep records of the number of student enrolments (see Appendix 18) for Australia, the U.K. and Malaysia.

5.4.4.5 Overview of Case C's Management Style

Unlike the two previous case studies, the organization structure of Case C is flat. Dr C2 says that everyone takes responsibility for themselves and there is no need for her to monitor the members of staff. The channels of communication are much looser in this firm and any employee can make an appointment to see Dr C2, or simply walk into her office to give comments or make suggestions. Ms C4 said, *'She is the type of manager that would welcome whatever your thought is. So even I am not sure, I will tell. If ever your suggestion is good, she really appreciates it'.*

In practice, Dr C2 is responsible for the daily operations of the company as the M.D., Ms C1, only comes into the office occasionally to obtain some progress reports. During the peak season however, Ms C1 will come in to help the employees out.

There is usually a monthly meeting for all members of staff, in which the progress of their projects is discussed and the employees can update each other on their individual work and on their students. However, the staff reported that the meeting is usually informal and may not happen every month. Case C also conduct post-mortem meeting for their exhibitions so they can discuss what was successful and what they should do differently for future exhibitions.

Four participants claimed that the management placed great confidence and trust in their employees. For example, if complaints were made by the students or the parents, the M.D. would firstly investigate the matter herself without jumping to any conclusion. In Case C,

communication flows easily between the management and their subordinates. Ideas put forward by employees are taken into account and they are fully involved in most decision-making, especially the education counselors.

Thus, as a consequence of the participative nature of the management style, the need to have a comprehensive performance measurement system with set targets seems unnecessary at the moment. Everybody member of staff knows what the others are doing.

5.4.4.6 Overview of Case C's Information Technology

Investment in IT in this company is mainly in items such as computers and printers while investment in management systems is lacking. The company has tried to develop their own in-house student-tracking system but this has mostly failed to operate as required. As Dr C2 reported, *'But we could not find, up to now we could not find any proper systematic database. And we are cautious that it cost us a lot of money. But that would be our biggest weakness.'*

At present, tracking is done manually with a file opened for each student. These files can be accessed by any staff member so they can cover for one another during periods of absence. The system is heavily dependent on manual operations and information is not instantly accessible. However, Ms C5, who combines the roles of Education Counselor and IT technician, was quite defensive about the system, claiming, *I have to plan the networking on what we have now.... So that's why I have my own IT server room. I make sure that all networks are all up every 24 hrs... The files in the server. So we are sharing. All information has been computerizing like student information. That's why we have terminal outside where student key in their contact, the data first'.*

Nevertheless, the current system is only able to keep student information, nothing more. The General Manager mentioned that further investment is needed in information technology in order for them to adopt a more comprehensive performance measurement system.

5.4.4.7 Newly Identified factors

There are a number of external factors influencing how performance might be measured in this organization. Given the nature of the business, networking and goodwill exercises are important in assisting the company to capture and maintain its market position. Ms C4, one of the Education Counselors, mentioned that the company sometimes resembles a charitable service as, ultimately, there may be no financial gain because all depends on the students' exam results and final decisions.

In this company too, the government influences performance. Many students are not able to make early decisions on their university courses as they depend on government scholarships. The Ministry of Education (MOE) requires students to get their chosen courses and universities accredited before they proceed with the application, which affects the students' freedom of choice. In addition, the visa requirements of the governments in host countries make the application process very tedious. Dr C2 explained, *'with the visa, there were new visa and the visa is completely changed now...It's biometric, digital finger printing, absolute nightmare. And typical UK, they make it so complicated, the whole paperwork and every week we have new regulations, completely updated'*. For non-scholarship students especially, the exchange rate will also have an influence on their decisions.

Dr C2 talks of the company trying to maintain an open dialogue with the Brunei government. The M.D. stated that a measure she would use would be the frequency with which the company is referred to by institutions such as government ministries or multinational like Shell Petroleum.

Internally, one year round task for the company is the tracking of students' applications. They need to ensure that every step of the process is followed and taken note of by the staff. The process has become more complicated since Case C moved into universities in new countries. Ms C4 commented, *'When I first started, first year, we were still, looking at the simple processing first because there were only three universities. I think it was very manageable'*.

The system for tracking is manual and is not very systematic, with some staff following their own rather than the standard procedures and so mistakes are made. Other than the tracking process, there are no work processes or workflows and Ms C5 mentioned that even human resources procedures are lacking, with no standard operations for staff to refer to.

5.4.5 Summary

The focus strategy practiced in the company since its inception has enabled it to expand its business and become the largest education agency in the country. The company mission to provide a better service for Bruneians has helped it to grow and receive recognition from both universities and governments.

Although there is no formal, written system of performance measurement, the M.D. and her business partner have monitored and evaluated the achievement of objectives informally but consistently. The influence of the government ensures that informal monitoring activities are

carried out by all staff involved with external parties. This is to ensure that the company maintains its good name and does not jeopardize the trust placed in it.

From an internal perspective, the company has been largely effective in tracking their students despite the lack of a formal workflow or KPIs within the system. On the other hand, the lack of IT expertise within the firm to develop computerized systems for their day-to-day operations has had a negative effect on the adoption of a formal, automated performance management system. Dr C2 said that she felt that ready-made performance measurement software would probably improve the firm's operational efficiency and ability to monitor activities.

Table 30. Summary of factors influencing PMS adoption in Case C

Factors	Findings
Corporate Governance	The owner does not get involved either strategically and operationally. Such involvement occurred only during the first few years of the business.
Human Capital	Training is given either locally or overseas.
Organizational Culture	Respect and Teamwork.
Organization Strategy	Product/Service Focus.
Management Style	Flexible.
Information Technologies	Medium IT usage, less complex IT and low IT investment but most of the information is in the student database
External Stakeholders	Students' results, regulators (M.O.E.); visa approval; accreditation (other governments) (All)
Existence of Work Process	They are still lacking SOPs. No manual is available for the staff to refer to and the only system they have is the student tracking system, which is still done manually. (6 participants)

5.5 Case D Performance Measurement System

5.5.1 Introduction

Case D was chosen as a case study because the company is one of the longest-established IT-related companies in Brunei. It was established in 1987 and nowadays has local branches and an offshore development centre in India. Its main activities have changed from hardware and networks solution to its current role as a niche provider of IT solutions.

5.5.2 Profiles of Interviewees

At the time of the study, the company consisted of twenty-one employees. They comprised the Chief Executive Officer (CEO), Managing Director, Heads of Department, Technicians and Clerks. Interviews were conducted with the Managing Director, Mr. D1, and five Heads of Department. The latter were chosen by the Managing Director because they have been involved in the evaluation process of the company's performance. Interviews were conducted with each participant individually in the boardroom.

- (i) Mr D1 is the Managing Director of the company. He oversees the performance of the company and reports directly to the director/owner of the company.
- (ii) Mr D2 is the Operations Manager. He assists the Managing Director in his daily work.
- (iii) Mr D3 is the Head of the Project Department. The department executes the tenders awarded to them. Mr. D3 oversees the planning and completion of projects.
- (iv) Ms D4 is the Head of the Finance Department. She is also responsible for the administration and human resources of the company.
- (v) Mr D5 is the Head of the Support and Maintenance Department. He oversees the after-sales and maintenance of clients' systems.
- (vi) Mr D6 is the Head of the Business Development Department. This department is responsible for preparing proposals for tenders.

5.5.3 Overview of Case D's PMS

The Operations Manager, Mr. D2, claimed that they inherited their current performance measurement system from their predecessor i.e. Ericsson Technologies. However, he did not clarify this in any detail. The targets are set based on the objectives of the organization. For example, one of the objectives is to bring more local talent into their team. In order to achieve this, targets were set on the number of locally recruited employees annually as well

as on the training provided to them. By 2015, their target is to have a 90 percent Bruneian workforce. In terms of finance, the annual target depends on estimated or predicted government spending on IT. This information is taken into account in deciding what targets will be appropriate. Furthermore, the targets do not depend solely on the total amount of tenders but also on the amount of profit each particular tender is likely to generate.

The purpose of Case D's performance measurement system is to ensure that they are working and achieving in accordance with their mission and vision. The system is used to measure how well they have achieved their stated objectives. It is also used as for development and improvement purposes. During the annual meeting, performance is compared to previous levels and target achievement. Thereafter, current targets will be reviewed and amended where necessary.

The set targets are based partly on their business process. As the activities of the company are based on projects, a Microsoft Milestone Application is used to monitor progress. As mentioned before, these targets are based on the company's strategy and involve such factors as the level of interaction with clients, milestones agreed with clients or targets set for them by the government.

There seems to be a balance between the financial and non-financial in the targets set by the management. Nevertheless, achievement of financial targets depends on the success of non-financial factors like number of training days and 'customer response rate'.

The current performance measurement system is quite flexible and easy to change. Any changes to government spending will prompt changes in the company's annual targets. Networking with government officers has enabled company employees and management to be alert and sensitive in relation to their targets. The milestones can also easily be adjusted in response to matters arising from the regular meetings held with clients.

The manager or person-in-charge of any particular target is highly accountable. Measures are monitored by the head of the project, who regularly reports to the CEO. As their work is project-based, everybody in the team as well as in the supporting divisions focuses their attention and efforts on achieving the set targets. Any delays or complaints are dealt with instantly. Appendix 19 illustrates the 'Service Desk Workflow' of the Support and Maintenance Department.

In developing the targets, various parties both within and external to the company are involved. This is to ensure all parties are at the same level and aware of each other's shortcomings. The existing system is integrated into the whole organization system. For example, any delays in payment will be automatically communicated to the project team.

The finance department will know when they are supposed to send out invoices to the clients based on the progress report of the project.

The performance measurement system of Case D can be illustrated in the following figure. It shows the origins of targets, targets reviews, target evaluation and how the targets link individuals within the organization.

5.5.4 Identifying the factors influencing PMS adoption

5.5.4.1 Overview of Case D's Corporate Governance

Case D has a single owner/shareholder who is not directly involved in the daily operations of the company neither in developing its mission nor its objectives. However, the management team has to submit reports on ongoing projects for him to review and he will offer suggestions to his team if projects are delayed. As a member of the Brunei AITI (Authority for Information Technology), the owner is au fait with government regulations for IT-related activities in the country and may offer direction. An annual budget is also prepared and submitted for the owner's approval.

The report prepared for the C.E.O. by the Managing Director contains certain targets for the management to achieve. Although the CEO is not involved in the daily operations of the business, he does keep track on the progress of all projects tendered to them. During the management meeting, a milestone report that ensures projects are on track and payment promptly received is submitted to the C.E.O.

5.5.4.2 Overview of Case D's Human Capital

There are marked similarities between this company and Case A in relation to human capital. In both organizations, there is a clear focus on training, defined budgets for this and a preference for in-house promotion.

The training takes place either in-house or overseas. The Finance Manager, Ms D4, explained that budgets are allocated annually on the basis of training requests submitted by each department. She gave an example of one employee who is currently studying overseas, commenting, *'We have allocated budget on yearly basis. For staff development. We have one now in London doing Master. Fully sponsored by Case D for degree and Master. Fully paid, so he is doing Master now, I think he will come back in two or three month. He has finished his degree now he is doing his master'*.

The purpose of training is to improve employees' skills, making them more valuable to the company and offering the staff the prospect of promotion. Mr. D5 pointed out that some of the employees have been with them for more than ten years. He believes that the company prefers to retain their existing staff and improve their skills and qualifications rather than recruit new and ready-qualified people in the job market. One example, mentioned by Mr. D1, was an employee who joined the company as a driver and, in the course of this work, became aware of the technical aspects of the company's services when he assisted the

technicians. He subsequently undertook training and obtained an Advanced Diploma as a technician. He is now Manager of the Support and Maintenance Department.

The company has support from project partners in India and Singapore and this has facilitated a technology and knowledge transfer. The result is that there is no shortage of the expertise required by their clients. The existence of a training centre in the company and their expertise in managing projects gives the company a competitive edge. Thus, Mr. D1 claimed that, *'The thing with Case D you really exposed in term of hands-on, so you learn faster. You do not teach theory here'*.

Employees are subject to annual performance evaluation, which can lead to increments and profit-sharing depending on the performance of the company. According to Mr. D1, *'So in term of rating, provided that year, the company has a good year, in term of profit, so we will accord them in term of increment, salary adjustment. We have exceptional 12% increment, excellent 8%, satisfactory if I am not mistake 2 or 4 per cent and these qualify for profit sharing also accordingly. If anything below satisfactory, they don't qualify and they don't share the profit sharing'*.

Training needs are met based on the performance of the employees. Employees who are sent to undergo certain training have either been recorded as low performers by their superior or they have been recommended for further study to enhance their skills. This activity could not be decided without a formal evaluation system to decide what proper action is to be taken for each employee.

Managerial knowledge is important for the organization and this has enabled them to introduce their own performance measurement system. Mr. D2, the Operations Manager is an MBA (Master in Business Administration) graduate from Manchester Business School. He claims to know what performance measurement systems and 'Balanced Scorecards' are.

5.5.4.3 Overview of Case D's Organization Culture

The project-based business structure of the organization means that teamwork is vital. In preparing proposals for the government, for example, the tender and project management teams must work together. If a project is delayed, it has an impact on the Finance Department as projects are financed through the bank and delays put pressure on loan interest. When a tender is awarded to Case D, the project management team will include all Heads of Department to ensure that the project can be completed on schedule. Mr. D5 described the process in this way, *'So the customer focal point is the team leader. Under the team leader we have a structure called team members, assistance team leader, our team leader and assistance team leader could work together, let say the team leader is on leave*

and our assistance team leader will take up the work of team leader'. Thus communication between departments is important.

Each project team will have milestones established to track progress and, when difficulties arise, meetings will be held to explore the problems. Mr. D1 explained that, *'We would brainstorm. How we can help the customer to speed up the project. Okay we will come up with our work around solution. Let's work out this way, let's work out this way. Okay so that we speed up the progress of the project'*. Without the cooperation of all departments, there is the risk that projects will not be successful.

Projects are handled in teams. Each member of the team needs to ensure they are doing their part to ensure the progress of their project so as to avoid any delays. Targets are set at each stage of a project. A delay at any stage of the project is reported to the management and this, in turn, will be reported to their clients if it is unavoidable.

Effective communication among the team members as well as with the support divisions contributes to the easy achievement of targets. The teamwork business model has helped Case D to adopt and implement their current performance measurement system. This is also helped by the identification of the importance of business process by the management.

5.5.4.4 Overview of Case D's Organization Strategy

The company has determined its strategy in line with the current national trend, which is the 'Made in Brunei' agenda. Management emphasizes the employment of local staff in order to obtain government tenders. The focus is on service differentiation with projects managed by qualified and well-experienced locals.

Budget estimates are based on the government's 5-year-plan for I.T., so projections about market share will be made to estimate the company's annual budget. The Finance Manager prepares cash flows for three- to five-year periods.

The Operation Manager said that the company has its own mission, vision and objectives. One objective is to increase the profit margin by 5 per cent annually. Another is to increase the number of staff with new skills. Mr. D1 mentioned that the company's vision extends to expanding the business outside the country. For this reason, Case D has signed Memoranda of Understanding (MOU) with major overseas players. Further to this, the firm works with world-renowned I.T. providers, in both hardware systems and in training facilities for their clients. The Operations Manager said, *'we have collaborated with world renowned training provider NILT.... So everything in place la, in term of online learning, study material, all has been designed.... We have in-house here to support the PC, any PC and brand.*

Most of our brand is HP, server HO, Dell we can support'.

Case D takes a proactive approach within the market to make sure they know when tenders will be out and where the government's needs lie. They pursue informal meeting with clients to obtain information of future government I.T. projects and they attend conferences where it is known that the government's Chief Information Officer will be present.

According to Ms D4, the latest company objectives had been developed by the managers in a workshop session a few days before the interviews took place. However, she mentioned that, even though the mission and vision had already been adopted by the management, they had not agreed to one of the objectives that had been proposed by the owner/shareholder. However, when asked further about this, she declined to disclose the information.

The existence of mission and vision in the organization has helped them to choose and implement an appropriate strategy. In order to achieve this strategy, the management introduces various targets for the person-in-charge or the project team to achieve. The alignment of targets with the strategy has aided the company in achieving its objectives.

5.5.4.5 Overview of Case D's Management Style

Even though the company practices teamwork in their projects, the decision-making process is still very hierarchical. Employees need to report the progress of their task to their superior. Given that the business of Case D is project-based, meeting are held regularly, on a quarterly basis, so that the management team can be updated on progress. At departmental level, meetings are more informal and may be conducted on a daily basis.

When issues arise, management may call the relevant staff members for meetings to discuss the problem. The Project Manager, Mr. D3, stated, *'Call them, sit down and discuss how the progress, any issues, why pending then I prepare another report and I pass to the management and when the management see that if it is still manageable, then okay. But if not so good, then he will call up for me discussion'*. Similarly, if the project team is unable to reach their milestones or completion targets, the project manager will prepare a report explaining the delay. The M.D. commented, *'so there is regular updates, internally, so we meet and update, we have not meet the milestone then we will start asking question, why is this, why is this, what can be done, because as D2 had mentioned delay mean cost to us'*.

5.5.4.6 Overview of Case D's Information Technology

As a company that provides IT solutions for clients, Case D has an advantage in developing its own monitoring systems. The company uses Microsoft Milestones software to track the progress of projects. Mr. D1 mentioned that everything is tracked and, if he wants to check the efficiency of the Customer Service Department for instance, he can just click a button and view this from his desk. Mr. D5 explained, *'anybody can access, even the GM and anybody can see. We have given username and password for them.... immediately the GM can go into the system and see whether the problem was stated there any why it was not fixed or at least you can see the history so it show what we have done and what was not fixed, the whole history'*.

However, not all information from all departments can be accessed directly from the computer. Project milestones cannot be accessed online, for example. Although a report has to be submitted on any project schedule, the employees are unable to access this directly. There is a lack of networking linkage of information within the organization. Nevertheless, the IT systems operating within the company enable it to make use of a 'partially-automated' performance measurement system.

5.5.4.7 Newly Identified factors

There are a number of external factors which influence performance measurement in this organization. As the majority of Case D's projects come from government tenders, financial targets will depend on the government's IT budget. If there is an increase in e-government projects for example, the company can expect an increase in its financial targets. However, changes in the government's budget will impact on whether the company's targets will be met. Mr. D1 explained the situation thus, *'Achieve, not only yearly basis because it depends on whether the government will release tender. Sometime we expect, okay, okay this tender will be out but it has been realized two years later of the following year. So I mean it is actually chicken and egg, you know'*.

The bureaucracy surrounding government contracts also affects the efforts of Case D to achieve their set targets. The Project Manager, Mr. D3 claimed that, *'Because we are dealing with the government ministry. They have a lot of protocol that would be the most challenging part.....With it come government we cannot go bypass them'*.

The company relies on overseas partners to provide expertise in service delivery and this dependency can affect the achievement of targets. If the stock of hardware in Brunei runs out, it has to be imported from Singapore. However, the actual manufacturing is done in China so the company has to plan accordingly to meet targets for the delivery of hardware.

Case D also depends on a software development house which is run in India. Delays have an effect on financial performance as the company must still service bank interest in financing the project. Ms D4 explained, *'We get bank to finance the project because all of our project are quite big amount. So one of my area is I have to, I have to work out how much funding we need for this particular project. So after we received the funding from the bank, then I have to monitor when we received and how much is to be made as a repayment to the bank'*.

These external factors, which have the potential to affect overall performance, have encouraged the management to implement a performance measurement system to enable monitoring and control.

Within the company, the existence of standard operation procedures (SOPs) allows Case D to monitor its operations. Targets have been implemented at each stage or level of operations. Mr. D5 of the Support and Maintenance Department provided an example, explaining, *'how the process work, somebody calling, our helpdesk received the call it will assigned to team leader, that is automated process in SMP, team leader will call the customer, grab the information that is the problem details, either team leader fix the problem and service requested ceased or he can ask team member to come and fix it. And if he fix it, I have put into cross just to cross check whether the team leader knows whether the problem already fixed or not. Team member need to update the team leader whether it is fixed or not, then only the problem is closed'*. (This workflow is illustrated in Appendix 20)

The work process is formalized and starts with the acceptance of a contract from the government. In the Project Department, milestones for monitoring progress will be set up. Once the project is implemented, the company signs the user acceptance test and they are then entitled to a warranty and maintenance for the software. Mr. D1 described it thus, *'User acceptance is for you to train the function we agreed upon, we agreed during the requirement study, so you should test, if it doesn't work, if it has bugs, let us know so we can fix as per your requirement. That are the thing we highlighted during the kick-off meeting'*.

5.5.5 Summary

From what could be gathered from the field study, the factor which influences adoption of a performance measurement system most in this company is its high investment in IT. This is hardly surprising given the nature of the company's business. The firm uses a ready-made software package, Microsoft Milestones and has also developed its own software for the Customer Service Department to monitor user complaints.

The role adopted by the single owner/shareholder is also a benign factor in terms of successful measuring of performance. He has minimal involvement in daily operations, trusting his management team to oversee things. The culture of open communication within the company is also beneficial.

The service differentiation focus strategy practiced by the management contributes to a consistent understanding of the direction of the company. They had held their mission workshop just a week before the researcher conducted the interviews, so the knowledge of the officers was very fresh. There is also a strong emphasis on staff training and the technical training provided means staff know the hands-on aspects of their operations. The staff has opportunities to improve their skills and achieve promotion. The employees are familiar with the requirements of each level of management and so there is a general understanding and acceptance of the targets set.

In addition to the six conceptualized factors, the existence of work processes and the influence of external forces are key in the adoption of performance measurement within the company.

Table 31. Summary of factors influencing PMS adoption in Case D

Factors	Findings
Corporate Governance	The owner has strategic involvement and is partially involved in operations, especially in relation to the progress of projects.
Human Capital	Training is given either locally or overseas.
Organizational Culture	Teamwork.
Organization Strategy	Product/Service Differentiation Focus.
Management Style	Flexible.
Information Technologies	High IT Investment as IT is their core business
External Stakeholders	Government (most of their projects are government tenders); bankers (projects are funded by banks); external expertise (lack of expertise requires them to outsource) and external service providers. (4 participants)
Existence of Work Process	They have their own SOPs. (4 participants)

5.6 Findings Summary

Despite their perceived success, not all of the companies seem to have clear, formal performance measurement systems. Table 32 summaries the finding. Based on the interviews, Cases A, C and D have the same level of management training with a flexible management styles reinforced by a culture that emphasizes respect and teamwork. These three companies also emphasize product or service strategy. However, Case B is lacking in management training and has a very rule-oriented management style reinforced by an outcome-oriented culture. Case B also places emphasis on cost strategy. Nevertheless, these factors did not differentiate the cases in terms of the level of PMS adoption. Both Cases B and D have a proper PMS compared with Cases A and C.

Table 32 - Summary of factors influencing PMS adoption

Factors	Findings
Corporate Governance	Case A - The owner is involved in both strategy and operation , e.g. approval of new products Case B - The owner is involved in some of the operations, e.g. approval of new products/services but less involved in the strategy (only for approval) Case C - The owner does not get involved either strategically and operationally. Such involvement occurred only during the first few years of the business Case D - The owner has strategic involvement and is partially involved in operations, especially in relation to the progress of projects
Human Capital	Case A - Training and career progression Case B - Lack of training due to shortage of employees Case C - Training is given either locally or overseas Case D - Training is given either locally or overseas
Organizational Culture	Case A – Respect Case B - Outcome-Oriented Case C – Respect and Teamwork Case D - Teamwork
Organization Strategy	Case A - Product Focus Case B - Product and Cost Focus Case C – Product and Service Focus Case D - Product/Service Differentiation Focus
Management Style	Case A – Flexible Case B – Rule-Oriented Case C – Flexible Case D - Flexible
Information Technology	Case A - Low IT usage with highly complex IT but low IT investment Case B – Medium IT usage, highly complex IT and high IT investment but most of this is linked to the Finance Department Case C – Medium IT usage, less complex IT and low IT investment but most of the information is in the student database Case D - High IT Investment as IT is their core business
External Stakeholders	Case A - Market trends, regulators, external channels of distribution (6 participants) Case B – Market trends; regulators (M.O.F. and M.O.R.A.); visa approval (other governments). (5 participants) Case C – Students’ results, regulators (M.O.E.); visa approval; accreditation (other governments) (All) Case D - Government (most of their projects are government tenders); bankers (projects are funded by banks); external expertise (lack of expertise

	requires them to outsource) and external service providers. (4 participants)
Business Process	<p>Case A - They have implemented work processes and work flow for the staff to follow; improvement of the workflow taking into account employees' feedback is currently in progress. They see work processes and systems as important aspects for the running of the business. (7 participants)</p> <p>Case B – Currently they are slowly implementing some work process and work flow but no feedback from employees was taken into account in the design. They see work process and system as important aspects for running the business but the initiative of developing this is still a one-person show, with the acting G.M. being indirectly responsible for transforming the company into a profit-making company. (5 participants)</p> <p>Case C – They are still lacking SOPs. No manual is available for the staff to refer to and the only system they have is the student tracking system, which is still done manually. (6 participants)</p> <p>Case D - They have their own SOPs. (4 participants)</p>

The owners' involvement (either partial or whole) both at the strategic and/or operational level and the level of investment in information technology is what differentiates these companies. Both Cases B and D have high IT investment with a degree of involvement from the owner at either the strategic or operation level. These two factors seem to influence the case companies towards a proper performance measurement system even though Cases B and D have different management styles, strategy, organization cultures and levels of human capital. However, there are two other factors that were identified by the participants as influential in the adoption of a system for performance measurement - external stakeholders and business process. The following section will analyze cross-case the eight influencing factors in order to understanding the similarities and differences amongst the cases.

5.7 Cross Case Analysis

During the data analysis process, the major themes were classified into eight separate categories. Table 33 provides a summary of the major identified themes of the influencing factors in a Bruneian context, based upon interviewees' perceptions. These will be discussed in the following section.

Table 33. Summary of the major identified themes of the influencing factors

Category of Factors	Forces	Sub-categories	Identified Themes
Corporate Governance	Drivers	Strategic Involvement	Owner involved in the strategic planning
		Operational Involvement	Owner less involved at the operational level
	Barriers	Operational Involvement Issue	Owner involvement at the operational level affects daily activities
Information Technology	Drivers	Management Information System	Clear sharing of information amongst subordinates Use of IT to facilitate communication Clear linkage of customer database
		IT Infrastructure Issue	Limited information sharing due to manual system Limited staff capacity to handle vast amount of data
	Barriers	IT Investment Issue	High cost of IT investment
Organizational Culture	Drivers	Employer/Employee Relationship	The management's personal approach towards subordinates
		Employees Feedback and comments taken into consideration	The management practices open-door policy
		Work Culture	Importance of teamwork and team achievement rather than individual goals Sharing of information amongst employees
	Barriers	Lack of conducive Employer/Employee Relationship	Reluctance to Share Information Sensitive national culture hinders criticism
		Commitment to change Issue	Difficult to change attitudes from previous work culture
Organization Strategy	Drivers	Business Intelligence	Proactive towards market needs Good reputation improves performance
		Clear Policy	Clear and transparent Mission and Vision Good practice of five-year business plan / strategic planning
		Customer service orientation	Customer retention is clearly monitored Clear communication with customers Product and services attractiveness and maturity are clearly monitored
	Barriers	Lack of understanding of the Mission and Vision by lower level management	

Management Style	Drivers	Open Communication and Respect towards subordinates	
		Authoritative Management Style	
		Sense of direction by the MDs	
		Frequency of Meetings	
	Barriers	Targets were given without prior agreement with the lower level employees	
Human Capital	Drivers	Management Training	Managers were sent for management training Proper training, not just for the sake of filling the training quota
		Experienced Manager	Qualified manager with vast management experience
		Clear Job Description and Task	Employees were given targets and understood their task from the beginning
	Barriers	Lack of Experienced Human Resources	Locals prefer to work with the government Locals prefer to work with the government Lack of proper management training
External Stakeholders	Drivers	Local Government Rules and Regulation	Requirement to submit five-year plan and other reports Use of government rules to set targets
		Foreign Government Rules and Regulation	Requirement by foreign government to follow their standards and regulations
		Supply Chain	Targets were enforced on suppliers and/or appointed distributors Targets enforced by clients/customers
		Market Trends	Changes in the market force an active monitoring system
	Barriers	None Identified	
Business Process	Drivers	Work System	Clear workflows for employees to follow
		Work Policy and Procedures	Existence of targets on work process Existence of checklist and procedures Sign-off documents for verification
		Updated Work Process	Up-to-date work process which does not burden the employees Reviewed and revised based on comments and feedbacks
	Barriers	Absence of Documentation Culture	Difficulties in identifying key work process to develop KPI

5.7.1 Organizational Strategy

The following section presents the research findings relating to organizational strategy, which Chandler (1964) described as, 'the determination of long term objectives and setting of the necessary action steps with the identification of stakeholders' needs'.

5.7.1.1 Identified Drivers in Relation to Organization Strategy

5.7.1.1.1 Business intelligence

Several interviewees identified the following positive consequences of good business intelligence in their organization:

Proactive towards market needs: This notion is supported by Fleming *et al.* (2009) who noted a significant positive relationship between a growth strategy (competitive strategy) and adoption of PMS. The practice of scanning the external market operated by all the case companies enables them to be more competitive. Case A focuses on Islamic Insurance; Case B on Hajj and Umrah (Islamic Travel); Case C on Education Provision and Case D on IT Solutions through government tenders. However, even though these companies have adopted a product focus strategy, they also practice competitive strategy. This enables them to develop and concentrate on a few KPI and thus focus on a few strategic processes. The need to adopt a product focus/competitive strategy results from a limited market share. Amizawati *et al.* (2010) found that differentiation strategy and intensity of competition both affected the choice of PMS attributes that their sample of service SMEs made. The findings of this research support those indicated in previous research which showed that, prompted by market uncertainty, the case companies have adopted more contemporary PMS models rather than the traditional one.

Good reputation improves performance: All of the case companies also emphasize their good image and reputation. Public perception of the organization is one of their featured KPIs. All of the MDs of the four case companies agreed on the importance of this. However, in none of the companies is there a clear yardstick to measure this public perception. Although one of the most cited KPI by the management teams is quality of services, the appropriate KPI are not formally laid-out. All four companies use customer retention as an indicator of the quality of their services. If a customer comes back to them for another round of service, it means that the customer is satisfied with the quality of their services. Thus, it also means their reputation is considered good in the eyes of the public.

Case D, for example, ensures that their reputation is maintained by achieving the timeline of all projects. The ability to deliver their services on time is the KPI that they use. Meanwhile, Case C does not allow hard selling by their team. The MD focuses on the quality of services

provided to the students and the level of support given is considered part of the KPI to which they refer to indicate whether they have achieved their objective of monitoring their good reputation.

Similarly, in cases A and B customer satisfaction through customer retention is perceived as a good indicator of strong corporate image. If they see that their clients do not come back to them for renewal of insurance (Case A) or to perform the Hajj or Umrah for the second or third time (case B), it means that the customer was not satisfied with their previous experience with the company.

5.7.1.1.2 Clear policy

Some interviewees believe that clear policy has led to the following positive consequences:

Clear and transparent mission and vision: According to Payne (1958) in Quesada and Gazo (2007), '(.....) for a company to be successful it must be capable of setting short and long term goals in a realistic sense. These goals must be based on company's mission, vision and strategy statements'. The M.D.s of all four case companies claim that their organization has a clear mission and vision, which has been communicated to the management team. The stated belief of the M.D.s is that it is the responsibility of their management teams to communicate this further down the chain of command.

'I realize we have to let them know our vision from the beginning. Not only company vision also company profit. I told them that I want to see them better and not to be stuck in one branch. They will be rotated to other branches as well'; 'I am able to have given them the same vision as mine' (BOP HoD of Case A)

Communication of the company's mission throughout the organization allows the layers of management to develop KPI in alignment with the corporate vision. This development will allow managers to establish targets for their individual subordinates. Furthermore, if any strategic initiatives from the top management are communicated clearly to the lower level management, this will improve buy-in (Saunders *et al.*, 2008:1107). Kaplan (1996) argues that this process is vital to the successful adoption of a PMS. There is clear evidence of such a process operating, to some extent at least, in cases A, B, C and D.

Quesada and Gazo (2007:17) also found that, by having a mission and vision in place, the manager will be able to identify the critical success factors and eventually come up with critical KPI through the determination of key internal business processes.

'you have to draft and know where you are going. You have to be sure of where you going to have the company because we are not having the company for one or two years' (MD of Case A)

'But we have direction; we know we want to go. We know where we want to go. We know where we want to go, which area we want to market to concentrate on. The MD style, this is something that going back to Islamic principle' (Head of Department of Claims for Case A)

Good practice of five-year business plan / strategic planning: Long-term planning, such as the existence of five-year business plans, also encourages adoption and development of a formal PMS. Where there is a five-year plan in effect, it shows that the management team has been given the power to discuss the direction of the company in detail. Cases A and B have only fairly recently implemented five-year business plans. At the time of the interview, they are approaching their second round of such planning. By having the five-year business plan, these companies have been able to identify their KPI more exactly.

'After they have strategies in place, they said they want to introduce this; they want to put this into their market, increase their revenue by minimum 5% and stuff like that. I did the projection'; 'Those are general objective for the next ten years' (AMD of Case B).

However, they are still unable to take the next step; to identify strategic business processes to develop these KPI, making them more meaningful. As Gomes *et al.* (2004:522) point out, 'Managers have the tendency to measure what is easy to measure, rather than what is necessary to measure'.

Cases C and D do not have five-year business plans. In fact, case C does not even have a one-year budget plan. However, case D does practice annual budgeting and their mission and vision have been communicated well throughout the organization.

Another sub-factor that affects the adoption of PMS is the practice of customer service orientation. Employing a customer-oriented strategy encourages the management team to monitor customer feedback, translating it into input for their strategy. All of the case companies are customer service oriented and this, together with the exercise of budgetary control, has pushed them to adopt monitoring systems to serve their clients better. This echoes the findings of Phillips and Louvieries (2005) in their study of a sample of SME operating in the leisure industry.

'As mentioned to you earlier, what are our differentiating factors, project management, how we position ourselves in term of the competitors, these are first strategy. Second strategy soon in any tender, there should be Made in Brunei element, so you can understand. And actually more Made in Brunei Product and our local people to be groomed in term of specific skill set, certification, etc. Third to get AA status, so this would be mandatory requirement very soon' (MD of Case D).

'Satisfaction of our customer which consist of students. We are able to assist them as much as we can. Because you got to understand, as you understand, our service that we offer is for students', 'So the objective is to give as much as assistance and for a smooth process' (MD of Case C).

5.7.1.2 Identified Barriers in Relation to Organization Strategy

5.7.1.2.1 Lack of understanding of the mission and vision at lower level management

Despite the M.D.s belief that their mission and vision are clear and clearly communicated, many of the lower management team members in cases A, B, C and D feel that the

employees are unaware of its existence. Their assumption is that their company exists to make a profit and that reaching the targets set for them is sufficient to satisfy the objectives of their unit. There was little awareness at this level of how the operational activities affect the overall performance of the organization. This lack of awareness affects the acceptance of PMS by lower level employees and the degree of adoption of a system by the company (Hudson and Smith, 2007; Johnston and Pongatichat, 2008).

This corresponds with the findings of Quesada and Goza (2007) in which their case company plant managers (lower level management) had a very limited knowledge of the mission and vision of the company. This produced different CSF priorities between the upper and lower levels of management. The findings are also consistent with those Decoene and Bruggeman (2006), where lack of strategic alignment between the corporate business strategy and manufacturing strategy affected the case companies' overall performance.

5.7.2 Corporate Governance

As outlined in the Literature Review, corporate governance is generally those elements that describe the composition and specification of rights and responsibilities of the different participants in the organization, such as the board of directors, managing directors, managers and owners (Brunninge, *et al.*, 2007; OECD, 1999).

Based on the evidence from the interviews, the issues related to corporate governance in the case companies can be classified into two major sub-categories: owners' strategic involvement and owners' operational involvement. These are discussed in more detail below.

5.7.2.1 Identified Drivers in Relation to Corporate Governance

5.7.2.1.1 Owner/Shareholders Involvement at Strategic Level

Prior studies (Brouthers *et al.*, 1998; Brunninge *et al.*, 2007) indicate that the appointment of outsider BoD members can contribute to positive strategic change. Based on the research evidence, the majority of the interviewees are of the opinion that the involvement at strategic level of an outsider appointed to the BoD will influence the company's decision in adopting its PMS either partly or wholly. At the strategic level, it is the responsibility of the owner to establish the mission, vision and objectives of the organization and to make these understood by the managers they have hired. The owner, through his management team, must ensure the alignment of strategic goals and operational activities. Any PMS the company adopts will need to be aligned with the operational level targets and the corporate vision.

The presence of a non-owner manager will require some form of PMS to ensure activities and targets can be communicated to the owner. On the other hand, as an owner-manager is likely to be involved at both strategic and operational level, it is likely that there will be a PMS in operation in this structure too, although it may not be formalized. However, as Garengo & Bititci (2007) note, companies with non-owner managers have a more advanced performance measurement system than those companies managed by the entrepreneurs themselves.

In cases A and B, the BoDs comprise non-owner directors and managers and their management teams need board approval for any strategic planning process. Nevertheless, the owners are only involved at the final stage of the strategic planning process, when they will approve or reject the plan, wholly or in part. If there are any major issues arising during the meeting, the owner will usually give a recommendation or comments on that particular issue. Any less important issues will be left for the management team to handle. In both cases, the most frequently cited issues in which the owners become involved relate to budget. Thus, the owners' role can be described as essentially advisory. The Business Operation Manager of Case A and M.D. of Case A both claimed that the Board of Directors are directly involved at the strategic level of the business operation:

'Usually we prepare the performance report quarterly. Every three months, quarterly to the management and also to the boards' (Case B)

'Proposal made by management, we endorse to the board. But sometimes they give us suggestion. Prepared by the management then endorse by the board but not all the proposal accepted by the board', 'It delays us. But for business is that you are fast will get it. But what to do? Example if especially when we try to grab business. Sometimes to take hotel for our Jemaah, if we slow, it will be gone then. We have to. The management have to submit to me. Their proposal if it's a big amount we have to submit to the BoD to approval' (Case A)

In cases C and D, the BoD is the owner or owners and they usually become involved in the strategic planning process from the outset due to the nature of the ownership. With few partners at the top, there is a greater likelihood of direct involvement. The owners contact the top management of their companies to discuss their annual strategic planning. Here the owners take on more of a managerial role. The main reason for this active involvement is that the owners themselves are well-versed in the business activities. The owner in case C is more active as a result of her personal involvement in the company's business plan when they first established themselves. The owner used to run the business with just one member of staff for a number of years before recruiting a manager to handle the day-to-day operations. In case D, the owner's involvement in the strategic planning is due to his direct involvement in the regulatory body of the industry in the country. Consequently, he is conversant with up-to-date government IT regulations, especially the Authority of Info Telecommunication Industry (A.I.T.I.) of Brunei Darussalam. Thus it is appropriate for him to be involved in the strategic planning from the beginning and is beneficial for the company as a whole.

There are two types of corporate governance structure evident in the case studies; two companies with outsider BoDs and two with owner BoDs. Cases A and D indicate the most mature PMS among the case companies but each has a different corporate governance structure and degree of owner involvement at the strategic level. Cases B and C PMS show much less maturity in their PMS than A and D but they also differ in terms of corporate governance structure and involvement of the owner.

Thus the findings show mixed results and are not entirely consistent with the claims made in previous research such as that conducted by Garengo and Bititci (2007), Brouthers *et al.* (1998) and Brunninge *et al.* (2007).

It can be seen in these case companies that the involvement of owners in the strategic planning process, whether at an early or later stage of the process, can help to drive the adoption of a comprehensive performance measurement system.

5.7.2.1.2 Lower owner/Shareholders Involvement at Operational Level

Comparing the case companies again, the owners of cases A and B are not involved in the daily operational activities. This aspect is left to the top management to handle. However, in cases C and D, the owners are partially involved in the daily operational activities. For example, in case D, the owner will only get involved in the monitoring of deadlines for their projects. The management need to update the owner on the status of all projects undertaken, given that these include government-owned projects worth millions of dollars. The priority of the owner is to ensure that the high reputation of the company is maintained through good service delivery and meeting deadlines.

Meanwhile, in case C, the owner used to be actively involved in the daily operations of the company but has reduced this since recruiting a qualified manager. She will only become involved at the manager's request, especially when there is not enough available staff to handle certain events. This occurs mainly during the arrival of university representatives from overseas or in meetings with high profile government officers. The Operations Manager and one of the counselors commented on this during the interviews.

'Now he keeps an eye on what's going on but he did not get involved in the decision-making. Because she is his sister in law and she is the MD. So she is involved' (OM of Case C)

'Hjh joined the meeting on many occasion but not always. Depending on her as well whether there is issue that are relevant to that level or, if its jus a small... operation thing, they're not' (Counselor of Case C)

The existence of a non-owner manager requires some type of monitoring system for the owner to keep track of the performance of the manager and the company as a whole. The 'agency theory' supports this relationship between manager and owner (Gabrielsson and

Huse, 2005:29). With the existence of a proper PMS, an owner does not need to get involved in the daily operation of the company. Only at the strategic level might an owner need to be involved, due to the importance of overseeing the future direction of their organization.

5.7.2.2 Identified Barriers in Relation to Corporate Governance

5.7.2.2.1 Interference of the owners at the operational level delays daily activities

It is common for SME to have an owner-manager who runs the business themselves. This usually happens when the business is at an early stage of operation. For example, in the cases of companies C and D, their owners were heavily involved in the daily operations during the early days of the business. However, it was apparent during the interviews that once the companies had been in business for more than ten years, this was no longer the case. The owners started to hire managing directors to handle the daily operations. Consequently, the owners' operational responsibilities were reduced and the management only need to present a monthly report to them.

In all of the case companies, the owners have tended to minimize their daily operational involvement. Nevertheless, in Case D, the owner has occasionally involved himself more in the operation of the business as he needs the management team to report the progress of their tender projects to him on a much more frequent basis. In case A, it is the involvement of the BoD that affects their daily operational activities and causes delays according to the Head of the BANKA Department.

'You know if we want to develop the product it's not only with us. First, BO Syariah has to know, then BoD as well. It takes time to wait for BOsyariah. So our new product comes out very late. We still follow all those old procedures', 'It is internally that is slow'.

5.7.3 Organizational Culture

The next feature of PMS adoption to be addressed is that of organizational culture. For the purpose of this research, organizational culture is, 'A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems' (Schein, 2005).

The following section presents the research findings relating to this aspect in each of the case studies.

5.7.3.1 Identified Drivers in Relation to Organizational Culture

5.7.3.1.1 Good employer/employee relationship

Management's personal approach towards subordinates: The Managing Directors of cases A and C seem to practice a more personal approach towards their subordinates than those of cases B and D. During the interviews, the researcher formed the impression that the M.D.s of the former two companies know each one of their employees. They even claimed that it is their policy to walk around the office informally and ask their subordinates about their well-being. The M.D.s saw this as an opportunity not only to communicate the company mission and vision but, at the same time, to gather valuable information from the employees. This has an indirect influence on the M.D.s' strategic and operational policy.

However, in cases B and D, the relationship between senior management and subordinates seems to be more formal. Even though the M.D.s encourage comments and feedback, most of the ingredients of their decisions are based on their own perceptions of their company's performance. In case D, the project team has less control of many of the major decisions, such as setting targets. The sales executives decided these. It has become common practice in the company to receive their targets from the top. Nevertheless, the management did claim that targets given to their project team were based on their long-term experience of handling government projects. This experience has allowed the creation of standardized timelines. Their targets also depend on their client's needs and timeline. In order to win the project (tender), the company has to guarantee delivery within the given timeline.

5.7.3.1.2 Employee feedback and comments taken into consideration

Management practices an open-door policy: As mentioned earlier, the management in three of the case companies do practice an open-door policy. The exception is case B, where the A.M.D. requires subordinates to follow the flow-of-command in their daily operation. Nevertheless, other managers in this company do operate an open-door policy for their subordinates. Therefore, in all of the case companies, it can be said that employees are encouraged to give feedback on their tasks and targets, particularly during annual evaluations, and that managers have a paternal role, although in case B, the parent is stricter. During evaluation meetings, employees can give their comments and offer reasons for not reaching set targets. The employees are encouraged to suggest what could be done to improve their work so targets can be achieved. The existence of annual performance evaluation encourages improvements in company targets and the performance measurement system. This confirms the findings made by Bourne *et al.* (2002) which suggested that a paternalistic culture in organizations seems to reduce the fears of employees about performance measurement.

5.7.3.1.3 Conducive work culture

During the interviews, a conducive work culture was mentioned frequently by both management and subordinates as a key factor in encouraging targets to be achieved.

In terms of culture we more of family value. Since we know each other and I tried to create as conducive as possible for the staff to work here' (MD of Case A).

It was felt that a conducive work culture resulted from the following factors:

Importance of teamwork and team achievement rather than individual achievement: The existence of teamwork in the work place encourages and values team rather than individual achievement and consequently facilitates achievement of targets and improves the whole organization performance (Bourne *et al.*, 2002; Bititci *et al.*, 2004; Garengo *et al.*, 2005). This was clearly indicated in cases C and D. In case C, the M.D. herself considered that the success of any event, such as the annual 'Education Fair', is the success of the team rather than individual personal achievement. This was offered as the reason no annual employee performance evaluation exists in the company. The management encourages everybody, no matter whether they are in accounts or a receptionist, to be able to assist any student with their application if the designated officers are not available. From the counselor to the receptionist, they are able to open and close any student's tracking file. This has enabled them to achieve their targets without interruption, even in the absence of the designated person.

In case D, the project-based nature of their business has naturally created a teamwork atmosphere in the company. The job of a project team member does not stop once a project is completed but will continue until the maintenance warranty expires. Thus, the project team also needs to work with the support and maintenance department as their target will then be transferred into this department. The support and maintenance department also has its own service desk timeline. In this company, project managers are appointed and targets are then set by the managers for the whole team to achieve. The project team is accountable to the CEO and the finance manager as well as their clients. Adopting project milestones as part of their project evaluation system ensures that deadlines are achieved within the set target. The same applies to case C, where work is also organized on a project basis. Deadlines are important and every employee needs to achieve the set targets in order for their project to be successful.

'We work together and anybody can come and talk to me. I mentioned this during our first meeting. I told them that we do have different level of post but in term of work, we have to work together' (Agency HoD of Case A)

From the interviews, it appears that teamwork is a commonly used approach in all of the case companies. However, each company has a different PMS adoption level. This finding

confirms those of Chapter four, where there were no significant differences between the three clusters of PMS in term of teamwork orientation (refer to table 24 in section 4.5).

Information sharing amongst employees: Another factor mentioned by the interviewees as a contributor to a conducive working place is the willingness of each employee or manager to share information with everybody. Information sharing in case A flows smoothly within the organization due to the need to achieve a satisfactory level of performance evaluation at the end of the year. If anyone was withholding information, the affected employees would communicate their complaints to the appropriate manager during the evaluation period. Thus, the need to achieve certain targets encourages employees to share the needed information. There seems to be a mix of achievement culture and support culture in case A. Employees share information to indicate that they want to achieve their set targets but this might also be due to the need to support their top management out of respect (Handy, 1985). In Cases B and D also, the existence of an annual employee performance evaluation system and the need to achieve their set targets encourages members to share information with their colleagues.

However, in case C, information sharing is practiced not as a result of the existence of annual performance evaluation but rather as an act of respect towards their manager. Thus, a culture that encourages information sharing will offer the best chance of successful adoption of PMS. This finding concurs with those of Bourne *et al.*, (2002); Bititci *et al.*, (2004) and Garengo *et al.*, (2005).

5.7.3.2 Identified Barriers in Relation to Organizational Culture

5.7.3.2.1 Lack of conducive employer/employee relationship

A lack of conducive work culture creates negative consequences for the adoption of a performance measurement system.

'Management tends to make grudges. Management likes to condemn you on things. Seldom, it's a rare thing to hear. Any mistakes, it will be keep on mentioned for that whole year' (HoD of Hajj and Umrah for Case B).

Some of the factors indicated by the interviewees that hindered a conducive work culture within their organization are detailed below:

Reluctance to share information: In case B, one of the interviewees mentioned that it is difficult for him to do his work when some managers are reluctant to share information that he/she needs. Most of the relevant information is related to financial matters and, without this data, it is difficult for the interviewee to achieve his target in preparing their monthly financial report. This has a direct effect on the performance of his work.

'Even one or two department are reluctant to cooperate. Some people still holding some information' (Assistant Finance Manager of Case B).

The A.M.D. in this company practices a power and achievement culture, which has influenced the other managers to misuse their power by delaying their tasks. In cases A, C and D, there is more of a leaning towards achievement and support culture so information is shared effectively within the organization in order to smooth the flow.

As Gomes *et al.* (2004:523) state, for a performance measurement system to move forwards, it is important that the information is easily available, reliable as well as being responsible. The information should be available not only for the internal stakeholders but also for the external parties that have an interest in the company. In case B though, some information was not readily available due to the ignorance of a few Heads of Department about its importance. Consequently, this affects the efforts of the A.M.D. to integrate the system into one complete company-wide performance measurement system.

Sensitive national culture hinders criticism: The sensitivity of the national culture in terms of work habits hinders a conducive work culture for those who are not local. This is especially true in cases C and D, where there are mixes of nationality within the organization. The interviewees, for example the Operations Manager of case C, mentioned that it is more difficult to give comments and constructive criticism to their local employees than to the foreign employees. The foreign employees are more accepting of comments and criticism from the management than the locals. Thus, there seems to be a cultural difference between the two types of employee. This is especially shown when the management comprises foreign experts who find it difficult to adjust to the local work habits. They find it difficult to give comments and recommendations to their local counterparts.

'But in the other way, it's an Asian organization and the performance is sort of like, how you comment or criticized someone become quite sensitive' (Operations Manager of Case C)

Although the same is true of case D, the senior management is already well aware of the local working habits and has given advice to their foreign staff members on these issues. For cases A and B, nearly all of the employees and the management teams are local so they do not have any issues with national cultural sensitivity. Local-to-local comments and recommendations are more readily accepted by the local workforce. For two of the case companies though, the mix of nationalities does present challenges for the organization, as part of the criteria for an effective PMS is for it to be annually reviewed. However, without free comments and criticism, this cannot happen.

5.7.3.2.2 Commitment to change

Difficulty in changing attitudes from previous work culture: Previous research, for example in Chan (2004), indicated that one of the main reasons for not successfully adopting a PMS, such as the BSC in their case study, is due to organizational resistance to change. This was also indicated by the A.M.D. of case B, who mentioned that it was very difficult for her to push the management and their subordinates to follow the new procedures that she implemented when she first joined the company. Both management and workers had a fixed mindset. However, implementing the targets set by the board of the directors helped her to enforce the changes she desired. The A.M.D. also introduced performance measurement to evaluate her individual subordinates' work. The lower level employees have bought in to the system and a culture of performance measurement is emerging in the organization. This, in turn, has helped her to achieve the company target of moving from a loss making company to a profit maker. Thus, the power culture engendered by her authoritative management style has helped to push the adoption of the performance measurement system. Nevertheless, she is still aware that she needs to change the culture into a more supportive and achievement oriented culture while still maintaining the authoritative management style that supports the operation of the performance measurement system. This finding concurs with those of Manville (2007) in his study of not-for-profit SMEs.

5.7.4 Management Style

A further influencing factor on the level of adoption of a PMS is management style. Tull and Albaum (1971) in (Poon *et al.*, 2006) define this as, 'A recurring set of characteristics that are associated with the decisional process of the firm or individual managers and the attitude and behavior of managers towards their subordinates in achieving organizational objectives'.

The findings on management style in relation to the development of PMS in the case study companies are outlined below.

5.7.4.1 Identified Drivers in Relation to Management Style

5.7.4.1.1 Open communication and respect for subordinates

There is open communication between management and subordinates in cases A, C and D and some empowerment of employees to make their own decisions within the boundaries of their responsibilities. In the case of A, it is more of a mixed management style in reality.

'They can also come to me, don't have to make appointment. I don't have secretary actually' (MD of Case A).

'So they would just take the responsibility themselves. I don't have to stand behind them and watch' (Operation Manager of Case C).

5.7.4.1.2 Authoritative management style

Case B, on the other hand, is more rule-oriented. The A.M.D. is actually more vocal than the M.D. himself. In developing their KPI, the former enforced rules and regulations and introduced clear SOPs for her subordinates to follow. However, this type of management style has helped them to achieve their strategic goal. With the implementation of SOPs, the company was able to identify the key processes that they needed to improve on and could thus develop key performance indicators based on the identification of key strategic work processes. Her strict management style seems necessary in overcoming the previous government mentality among the employees and the existing management. This rules and regulations management style has been followed by the other managers and employees of each unit have to follow the SOPs and achieve their set targets. If an employee fails to do this necessary action towards is taken. Garengo and Bititci (2007) found evidence that successful adoption of PMS was the result of initial use of an authoritative management style followed by a more consultative style at the later stage in order to get employee buy-in.

5.7.4.1.3 Sense of direction by the MDs

In all of the case companies, the MDs have a sense of direction about which market segment they want to concentrate on. This sense of direction and focus has enabled the management to communicate their mission and vision to their management teams. Due to the small market size of the industries these four case companies are in, the focus strategy assists the management to easily identify the KPI that they need to monitor. Such focus on market segment means there is less confusion in the management team on the relative importance of objectives. It also helps to minimize the number of KPI that need to be monitored as a result of fewer work processes.

'The MD has a sense of direction, he has that. His own style. Takaful X is big but they don't know their direction. Here, sometimes small has its advantage in Brunei' (HoD of Claims for Case A)

The commitment to long-term thinking by the management indicates that they are committed and clear in their intention to adopt a PMS. Where such an attitude is lacking, it is likely that PMS adoption will fail. This notion is supported by the findings of earlier research (Hwang and Thorn, 1999; Nair, 2004 and Bourne *et al.*, 2005).

5.7.4.1.4 Frequency of meetings

In all cases an annual meeting between the Board of Directors and the management team is common practice. In cases A, B and D such meetings are also held quarterly as, for cases A and B, this is required to evaluate the company's quarterly performance. This is to ensure that any problems or issues can be attended to immediately. If there is a drop in sales, for

example in the first quarter, the management team will have to come up with a plan to compensate for that drop in the next quarter. For case D, these meetings are mostly based on the timelines of their current projects. The management team will have project meetings to discuss the progress of different projects as this is one of the KPI they have to monitor. This is in line with the company objective of ensuring timely delivery of services to maintain their good reputation, especially as many projects are from government tenders.

On the other hand, a system of informal meetings is evident in case C, possibly due to the small size of the company. A high frequency of scheduled meetings is indicative of adoption and practice of a PMS so case D, with more frequent meetings, in fact has a more formalized PMS than cases A and B. The lack of formal meetings in case C reflects the company's lower level of PMS adoption.

5.7.4.2 Identified Barriers in Relation to Management Style

5.7.4.2.1 Targets given without prior agreement with lower level employees

Managers in Case B complain that there is a lack of consultation or discussion in relation to targets that are set for them by the A.M.D. This person, who is also the finance manager, alone decides how much the sales targets are for her two operation departments i.e. Travel & Tours and the Hajj & Umrah departments. At the same time, the managers of the two departments themselves decide the targets that need to be achieved by each individual employee. The Travel and Tours Manager said that the sales targets that were given to them increased year on year and she did not feel happy about it. However, she felt that there was little to be done as, in her opinion, the A.M.D. would assume that they were just being lazy if they requested the target to be lowered.

'Normally, the better you do, the more you get next time. They calculation method also, it never go down, it will go up and up. We look into, which is our strong area that is where we allocate more to achieve' (HoD of Travel and Tour for Case B).

'To me if you want to be lower than last year mean simply the answer is you just being lazy. Sometimes, a bit lower If you can achieve this and it's unrealistic, you can achieve it. Why want to perform less, unless you verify to me' (AMD of Case B).

5.7.5 Information Technology

The next factor in PMS adoption focuses on information technology. For the purpose of this research, information technology is the use of machines and programs to collect and analyze data and subsequently produce information to be used as a basis for decision making by managers (Researcher).

The following section presents the research findings relating to this factor.

5.7.5.1 Identified Drivers in Relation to Information Technology

5.7.5.1.1 Management information system

Clear sharing of information: Prior studies have recommended that developing a management information system is a significant step in adopting a performance measurement system amongst small and medium enterprises. A clear flow of information within the organization assists the proper management of that information. Cases A and D have a very effective way of communicating information to the subordinates in their organizations. For case A, targets are effectively communicated to managers and subordinates through meetings. However, the system used to communicate these targets is still partly manual. Data used for decision-making, such as customers' details are properly stored in their database but the information first needs to be manually recorded before it is entered into their automated system.

Information gathered is easily accessible to authorized personnel but some personnel from other departments might need to retrieve the data manually from the department that stored it. Thus the database itself is not wholly accessible throughout the organization. If manual data extraction is required, that will slow down the decision-making process of the management team. Proper management of data, either manually or automated, does help an organization to arrive at proper decisions and it will affect the adoption and maintenance of a PMS. If data entry and extraction is time-consuming, this can lead to members of the organization abandoning the system, as found in the studies by (Bourne, 2001; Bourne, *et al.*, 2005; Franco-Santos & Bourne, 2002; Marr & Neely, 2001).

For case D, their main business activity is in IT solutions so the data is stored in the system in a fully automated manner. In case D, it does not matter where the managers are, they will still be able to access the system and give instructions instantly. For example, if there are any delays in their project, the managers will be able to see from their charts that action needs to be taken and they will know who should be queried about the delay. This is the same with the support and maintenance department, which handles customer complaints. Any complaints made through their call centre are attended to automatically. The operator will just need to key the nature and details of the complaints into the system so the team leader will be alerted instantly. The complaint itself will be monitored constantly by the system. If the complaint is not settled within the set target, the system will automatically indicate a 'red alert'. The system therefore affects the performance of the respective team leaders and their team members.

5.7.5.1.2 Use of IT to facilitate communication

Linkage of customer database to the accounts: Previous studies indicated that the use of IT in implementing a PMS helps the success of the system. According to Bititci *et al.* (2004), the use of management information systems enabled their case companies to successfully implement their PMS initiatives.

This has been proven in cases B and D. These two case companies rely heavily on IT in their daily operations. Case B uses the travel and tours information system that is linked to their accounting system. The use of such a system has helped the Assistant M.D. to monitor their daily financial activities. As the company adopts a cost reduction strategy, the linked operation, ticketing and financial system enables the company to achieve their financial strategy. Without the existence of such a linked system, the Assistant M.D. would not be able to properly monitor and control transactions. High investment in the software has directly influenced the management team to use it as part of their performance measurement activities, such as target setting. The Senior Accounts Officer can see if there are still accounts left open at the end of the day. Any such accounts will trigger a query from the accounts department to the front office. One of their objectives is to minimize bad debts and the existing system enables them to monitor such activity, in line with their cost reduction strategy.

'We are using Abacus system which is link to our travel as well. It's a system already customize, that link to our finance. Previously to issue receipts use manual. Now it is link to accounting system. Now only link Hajj Umrah, Travel and Finance' (A.M.D. of Case B)

'The good thing with power suit is, now we are connected with travel, and Haji Umrah, so whatever they do at the counter directly link to us' (Assistant Finance Manager Case B)

As case D is an IT solution provider in the country, the company is well-versed in creating new software. This has influenced them to develop their own PMS, which has a clear focus on the achievement of deadlines for all projects. The company uses the 'Milestone' system in monitoring and controlling their projects. If there is any delay in meeting the deadlines, the system will automatically indicate the delay and the proper person-in-charge will be informed so action can be taken. This system is also linked to the financial system as delays will affect the account departments also. Penalty charges might be incurred if there are any delays so the monitoring system is automatically alerted to avoid such charges. In addition, the company has also installed a 'response' system for their after sales service. Clients have been provided with a 24-7-call centre to report problems with their system. Clients contact the call centre and the operator takes the necessary information and complaints, which is then communicated to the person-in-charge. The time taken for them to solve the problem is recorded by the system. As mentioned earlier, if it exceeds the standard set time frame, a red alert will be indicated and this will be automatically communicated to the manager(s) and the C.E.O. The available system provides reliable, up-to-date information that can enhance

their performance measurement. Having such sophisticated information technology has helped the case company to have an integrated PMS that enables easy and instant communication among the members of the organization.

These findings confirm those proposed by Marchand and Raymond (2008:675) on how the integration of IS with the measurement system helps to achieve effectiveness and efficiency.

'We have a maintenance model, assuming this is customer, they can call us in any mode e.g. call number, then the helpdesk will take up the call, it will go to SMP this is our helpdesk. The SMP will register the service request form, which is in the computer itself, while it is registered, everything is automatic' (Maintenance Manager of Case D)

In contrast, for cases A and C, the use of IT is not as structured. Case A, for example, uses their information system for data storage rather than as a decision-making tool.

'But we do not have a mechanism in place where 'these students come and see us three weeks ago, we haven't contacted him since, we got to pick up the phone. So the record taking is easy. They just type the name and address in the computer and that's okay. But it's how do we use that information at the management' (Operation Manager of Case C)

5.7.5.2 Identified Barriers in Relation to Information Technology

5.7.5.2.1 Management information system

Manual database hinders instant information sharing: The lack of a highly developed information system has been cited as one of the main reason for not successfully implementing PMS (Chan, 2004) and this is certainly true in cases B and C. In both companies, the information system itself is not properly managed. A possible explanation for this is the lack of formally written standard operating procedures for the members of the organizations to refer to. For case B, the only data that is scrutinized is that relating to the financial transactions. Information on every transaction is recorded in detail and the procedures for approving every transaction are clearly understood by the managers and their subordinates. This is due to the authoritative management style of the A.M.D. and her emphasis on financial accountability and transparency.

However, in terms of the operational aspect of the business, they are still lacking a proper management information system. There are no proper standard operating procedures and work manuals for the employees to follow. Most of their procedures are communicated verbally. From the observations made by the researcher, both managers that handle the operations side of the business, that is, the travel & tours and the Hajj & Umrah, seem to have little idea of the direction of their operations. When asked about their data management, they both shifted blame to the weaknesses of the front desk staff. This lack of communication between the back office and the front office, as well as with their A.M.D.,

causes mistakes and delays. Neither manager seems to have a proper procedure for managing the customers' information.

By contrast, case C has an organized data collection procedure for their employees to follow. The smaller size of the company compared to the other three case companies means that data entry is much simpler. In comparison with case B, the various sale crews at the front desk enter data. On the other hand, although case C has a tracking system for students using their services for overseas university placements, this is wholly manual. The company is not able to monitor the quality of the services the students receive even though the operation manager claimed that this is one of the performance indicators that they monitor.

Such difficulty in accessing data as a result of deficient I.T. systems was also cited by Bourne *et al.* (2002) in their study of six medium-sized U.K companies.

5.7.5.2.2 Lack of investment in IT

High cost of IT investment: In all the case companies, investment in IT is considered sufficient for their daily operations, which is consistent with the findings from Garengo *et al.*'s 2005 study. As shown above, it was necessary for case B to invest in the travel industry software package (the I.A.T.A.), a system which links the front office with the Finance Department, where all transactions are automatically updated. Case D is able to call upon its own expertise in developing I.T. solutions. However, in the cases of A and C, their IT investment is quite minimal. In Case A, investment is mainly on the hardware used to facilitate their employees to do their daily tasks. The only software investment is the client database.

'Each one of them, including the driver can MSN, email because everybody will have email, email address but in term of accessibility to the webpage not everybody has' (MD of Case A)

This is the same for case C. The IT officer helped to develop the networking system within the company and created a student database. This investment is also quite minimal and has not had any direct impact on the development of performance measurement system.

5.7.6 Human Capital

The next area of PMS adoption to be analyzed is human capital. For the purpose of this research, 'Human capital is the accumulation of skills, knowledge and expertise via training and work experience of an individual. It also includes assistance received from external expertise such as government agencies and consultants' (Wahab, 2004).

These are the findings on the influence of human capital.

5.7.6.1 Identified Drivers in Relation to Human Capital

5.7.6.1.1 Management training

Several opinions were expressed on the positive consequences of this aspect of investment in human capital.

Managers sent for management training: Cases A, C and D invested time and money in the development of their human resources. Some high level managers and officers are sent to attend management training while others complete job-specific training. In these three case companies, the managers are mostly sent overseas for training while the junior officers are given in-house training. In case A, the Managing Director himself was sent to do his M.B.A. in the U.K. This formal training has helped some of the managers to understand management concepts that can be practiced in their daily operations. Specific management courses, such as on the Balanced Score Card (BSC), were conducted by outside consultants. Almost all of the managers claimed that they understood the function of the BSC. The rest had only heard the term BSC but do not really know its use. Managers in the relevant case companies felt that there is potential for such a system to assist them to better evaluate their performance and be able to reach clear and agreed targets. However, they mentioned that they would need outside consultants to assist them to develop this due to human and time constraints. Their statements concur with the findings of Chan (2004), Bourne *et al.*, (2005), Turner *et al.* (2005) and Angell and Corbett (2009).

Proper training, not just for the sake of filling the training quota: Besides the formal training, management teams also participate in informal training. Task rotation is a commonly practiced form of this within companies. Rotation of managers allows them to better understand the work processes and SOPs in other departments. They are able to understand the objectives of each department and know what other departments require from them. This indirectly allows alignment of strategy among different departments and overall with the corporate strategy. Case A indicated that it is common for managers to be rotated within the organization. A Fitch Rating assessment of the company in 2010 categorized the management team as being experienced, with the M.D. having 20 years' experience in the financial sector of the country (www.fitchratings.com).

Cases B and C mentioned that their managers are given training but the focus of this is generally product- or service-related. There is no proper specific management training available for them. For Case D, senior officers are sent to continue their higher education but to engineering courses rather than management ones. Access to management training would increase managers' management knowledge and skill. This would enable them to realize the importance of implementing a proper PMS. As Kaplan & Norton (1996) and Richardson (2004) asserted, both management and staff need proper training for the

successful implementation of a PMS. Cases B and D have been able to adopt PMS, not due to the management training given to the manager, but rather due to the vast management experience of the AMD and the MD respectively.

5.7.6.1.2 Experience of managers

Qualified managers with vast management experience: As mentioned earlier in the thesis, the reason for cases B and D adopting a proper PMS is due to the managerial and educational background of their A.M.D. and M.D. respectively. The A.M.D. of case B is an A.C.C.A. qualified manager with much experience, having held managerial positions in her previous jobs. Similarly, the M.D. of case D is a U.K. M.B.A. qualified manager with a background in the I.T. industry. He is aware of and understands some PMS frameworks, such as the BSC. The experience and education of these managers indicates appreciation of the advantages of having a proper PMS. Angell and Corbett (2009:187) also found that one of the driving forces of PMS in their case companies was the top managements' knowledge of business excellence criteria. However, both managers did mention that it would be too expensive to have such an elaborate PMS as the BSC for SME. Therefore, they have developed their own PMS, with very minimal criteria, in order to keep track their KPI.

'After that we started recruiting more experienced people' (Human Resource HoD of Case B).

Nevertheless, the existence of a qualified and experienced manager does at least assist in facilitating any performance measurement initiative. Previous research indicated that the existence of internal or external facilitator did help to ensure the successful adoption of PMS. As indicated in Bourne *et al.* (2002), the existence of a facilitator was a factor that contributed to successful PMS adoption in their case companies. Nevertheless, in this case study, although management teams were aware of the need to consult externally to assist them to develop a comprehensive PMS, they also felt it was not practical or financially viable.

5.7.6.1.3 Clear job description and tasks

Employees are given targets and understand their task from the beginning: When employees have an understanding of the task that they need to perform, it is easy for them to appreciate the PMS. All case companies have clear job descriptions and task roles for every employee. However, in case C, their job descriptions are overlapping. All employees are expected to perform colleagues' tasks when necessary. Nevertheless, every employee has his or her main designated position. For cases A, B and D, every employee is given their own annual targets and tasks to perform. Employees are evaluated annually on whether they have achieved their given tasks and targets. If an employee has not reached

the said target or has under-performed, they are expected to justify their apparent under-performance so the manager can ascertain if there is a need for further training.

Targets set for employees are based on the targets given for the whole department by the management. These targets are usually aligned with the corporate-level targets. Proper job descriptions and roles for each employee assist them to adapt to a PMS easily. This is clearly shown in cases A, B and D. Nevertheless, some managers in case B commented that there are no proper job descriptions available for their subordinates. Upon further investigation, these claims do not tally with their other claim that they do practice annual performance evaluation for each employee. The evaluation system takes into consideration the tasks and related targets set at the beginning of each year. It may be that the task roles are clear but not presented through formally written job descriptions. In case C though, there is no annual performance evaluation system, thus it is quite difficult to them to monitor the performance of individual employees.

5.7.6.2 Identified Barriers in Relation to Human Capital

5.7.6.2.1 Lack of experience in human resources

It was felt by some of the interviewees that the lack of experienced human resources personnel resulted from the factors outlined below.

Locals prefer to work for the government: For cases C and D, this issue is an ongoing problem. They find it difficult to recruit local manpower because of the comparatively high salary packages in the public sector. This has contributed to the lack of skilled workers. However, for cases A and B, their salary scales compare favorably with the public sector and their employees are provided with other benefits. Overall though, this contributes to a lack of human resources expertise and capacity for the private sector in general and the case companies in particular.

Lack of proper management training: As mentioned earlier, previous studies indicated that lack of management expertise was one of the factors contributing to the failure of the implementation of PMS (Sousa *et al.*, 1996; Hudson and Smith, 2007).

Case C sends their managers for specific courses that are service-related only, such as on the course content of the institutions that they represent. There is no specific management training provided. Thus, even though the manager claimed that they receive training, it is mostly on their services and not management training. Despite this, the Operations Manager claimed to understand PMS and said that it would be excellent for them to have such a system.

It is the same for case D, where employees are sent for specific job-related courses, such as software development. The training is industry-related rather than managerial. As stated earlier, it is the background of the M.D. that has led to the implementation of a formal performance measurement system where targets are set and monitored. In addition, the degree of sophistication of I.T. use within the company contributes to easy monitoring of the system.

'The guy that is going to do Advanced Diploma he joined as a driver. He joined as a driver then he became a trainee technician, then he managed to get his ComSia A+, it's a minimum requirement for us' (MD of Case D).

For case B, management training was offered to the management team but only the M.D. has been able to take this up, completing a Master's degree. The lack of take-up is due to time and manpower constraints and the effect is that none of the management team really understands the operation of a PMS with the exception of the A.M.D. Her background in Chartered Accountancy has led her to implement some targets and SOPs, with a strategic objective of cost reduction. Although these are not formally written, they have been communicated to the staff and implemented within the organization.

5.7.7 Newly-Identified Influencing Factors of PMS Adoption

There are two other factors which were identified by the participants as influential in the adoption of a system for performance measurement - external stakeholders and business process. It is clear that the need to be answerable to regulators and external experts is one of the most important factors determining adoption of a performance measurement system. Furthermore, participants in all four case companies raised the issue of the influence of external stakeholders, especially government regulators, in their performance measurement systems.

One compelling force towards adoption of a proper performance measurement system is, at minimum, the awareness of the participants of the importance of business process identification. Participants in cases A, B and C mentioned that the company still lacked proper standard operating procedures but claimed that having these would enable them to identify important business processes to aid the adoption of a formal performance measurement system. Case D has comprehensive and formally written SOPs and this has enabled them to identify important business processes, which has, in turn, contributed to the adoption of a more formal performance measurement system compared to the other three case companies.

5.7.7.1 External Stakeholders

The first additional influencing factor on PMS adoption focuses on external stakeholders, who include customers, local and foreign governments and suppliers. In effect, they can be defined as any group which has an effect on the company or is affected by it.

The following section presents the research findings relating to the influence of external stakeholders.

5.7.7.1.1 Identified Drivers in Relation to External Stakeholders

There are various external stakeholders that drive the case companies to adopt a proper performance measurement system. Previous research indicated that a strong formal external assessment of performance pushes companies to adopt PMS (Angell and Corbett, 2009:191).

5.7.7.1.1.1 Local government rules and regulations

Requirement to submit five-year plan and other reports: Based on the research evidence, the majority of the interviewees are of the opinion that local government rules and regulations are one of the main reasons for adopting a proper performance measurement system.

Case A, for example, is required by the local government to submit their five-year business plan and is subject to the 'Insurance Act' as its main sphere of operation is Islamic insurance. This industry is monitored strictly by the Ministry of Finance, with any new products requiring Ministry approval. Case A must also submit their monthly report for approval. This requirement to provide detailed information has helped the company to maintain a proper monitoring system to ensure compliance.

'Quite fortunate we had regulator. One of the stakeholders also, the regulated, you cannot be too creative or too innovative that go beyond the rules and regulation because we have Takaful order now insurance order that limits the way Takaful companies, Takaful operators and companies here operate in a good way'. 'We have submitted to our regulator in order to apply for compliance to Takaful order. We have to submit 5 years business plan' (MD of Case A).

Meanwhile, Case B has to submit their annual Hajj report. This is a requirement of the Ministry of Religious Affairs (M.O.R.A.) to ensure proper handling of the pilgrimage by operators in Brunei. The M.O.R.A. also requires them to align the activities of the pilgrims with those that are prepared by the Ministry. Thus, the need to align the program with that of the Ministry has forced the company to have a proper monitoring system to ensure their pilgrims' programs during the tour are properly organized.

Case C is not obliged to submit reports to any government ministry but must still comply with the rules and regulations laid down by the Ministry of Education (M.O.E.), for example on the accreditation of the institutions they work with. Students enrolled with any overseas institution need to submit their course content for evaluation by the Ministry. This is used as part of the monitoring system on the quality of their services.

'We sort of been monitored, closely watched, monitoring by MOE. They come here and visit us. Can't just do as you like' (MD of Case C).

The business activities of case D are also affected by government rules and regulation. At the time of the interviews, the local government had enforced strict guidelines for all IT solution providers in the country to abide by in order for them to operate and be eligible for any government tender. This has forced them to obtain the required certification quite recently and the MD mentioned that they were the first IT provider in the country to get such certification.

Local government rules and regulations do influence the way companies in the case study monitor the performance of their services. These requirements force them directly to develop a proper performance measurement system to ensure that they are in proper compliance. To fall foul of the regulator could mean damage to their reputation, which is the main concern of all of the M.D.s of the case companies.

5.7.7.1.1.2 Foreign-government rules and regulations

In addition to local government requirements, the case studies, especially cases B and D, have to fulfill targets set by foreign governments. The nature of their business requires them to meet the deadlines and documentation expected by the relevant foreign governments. Case B has to fulfill the requirement of the Saudi Arabian government in terms of Hajj and Umrah visa approval. In case C, the company must ensure their students meet the appropriate visa requirements of the issuing countries, for example those required by the U.K. Border Agency, before the students may travel to take up their courses.

'regulation in Saudi changes a lot. This is unpredictable regulation in term of visa, hotel. It makes us difficult, Visa. Their new regulation of not releasing visa early' (MD of Case B).

That is another problem, it take us forever. Sometimes they have to cancel their flight. Sometimes when send to Saudi embassy they will query why you give us so late. Then you said you have problems with Saudi government, they will said, it's not my problem'. (Assistant HoD Hajj and Umrah for Case B).

5.7.7.1.1.3 Supply chain

For all of the case companies, the conditions they enforce on their suppliers together with the demands placed on the organizations by those same suppliers or by their customers have resulted in the implementation of performance targets. If these targets are not met,

this will affect the smooth flow of their business process so there is a need for enforcement from both within and outside each firm.

'We have many partners, one of our projects MOE we have four partners, one Singapore, Malaysia, India. There are so many schedules to claim for us. It depends on our agreement some we have credit terms' (Finance HoD of Case D).

The interview process elicited several mentions of the influence of the supply chain on performance measurement and these are outlined below.

Targets are enforced on suppliers and appointed distributors: In two of the companies, targets are imposed on suppliers or distributors as part of the monitoring process. Case A requires their appointed agents to submit their sales' carbon copies within a month of the transaction so the agent can be issued with a new batch of copies in order to sell more insurance. In case B, the company gives certain timelines for delivery of the required software to their technical partners in India and Singapore. According to the Project Manager, if this was monitored, it would affect the overall delivery of their service to the government, resulting in a late delivery fine for the company. This would be a potential loss for them.

'Project wise we communicate CSD, if CSD said they don't have the expertise we will communicate with our partners outside to help. They normally have the same schedule as what we have. In terms of payments, sometimes I discuss with them to extend the credit term if there is delay in the project. When we work with them in term of contractual what we signed with the government Brunei will be similar to our target' (Project HoD of Case D)

Targets enforced by clients/customers: This is particularly relevant to the experience of Case D where their clients set the timelines rather than the other way round. The award of a government tender depends on the ability of the company to meet the deadlines given by the client department. Thus, the company has milestones for every project. Proper planning is needed in order to meet the given deadlines.

'It's determined by the customer. Normally there are two contracts in Brunei. Mostly government project, e-government project, they come up with standard template. All of the project they have the standard response time, resolution time' (Maintenance HoD of Case D).

In Case A, the BANKA department must meet the deadline given by their bank counterparts. The bank will require them to respond to queries about their clients' insurance coverage before offering their financing facilities. The BANKA department, together with the research and development department, has to come up with proper underwriting proposals.

5.7.7.1.1.4 Market trends

Changes in the market force active monitoring system: As noted previously, high competition and volatile markets have forced all the case companies to properly monitor their market in order to maintain their customer base. This can only be achieved through

use of proper monitoring systems. Phillips and Louvieris (2005) noted that undertaking of customer relationship management was one of factors that drove service sector SME to adopt a proper performance measurement system. The findings of this research show that this is true for the case companies.

For case A, they will receive feedback from their agents on the market conditions and trends in the insurance industry. This information will affect the strategy of the company and their targets will need to be adjusted accordingly. Cases C and D also use market trends in designing their PMS. The operations manager of Case C mentioned in the interview that the target for the number of students using their service would be much lower for that year due to the lower number of scholarships available from the Ministry of Education. For Case D, the M.D. himself observes the changes in the market through his active participation in local e-government policy formulation.

'And that's going to come to a smaller figure in the very near future with the growth of UBD, ITB, and UNISSA. The government would say, we have these lovely institution here, we have three now, there 3000 or 4000 of student sin it now. And how we going to begin to structure and growing, to maintain that, we need to keep more students here instead of sending them overseas all the time. So that going to be a change in what's happening' (Counselor in Case C)

5.7.7.1.2 Identified Barriers in Relation to External Stakeholders

No barriers relating to external stakeholders were identified from the interviews and observations.

5.7.7.2 Business Process

The other factor identified by the participants as contributing to PMS adoption is business process. This can be explained as how work flows in an organization and the processes that facilitate this. The following section presents the research findings on the effects of business process on performance measurement.

5.7.7.2.1 Identified Drivers in Relation to Business Process

5.7.7.2.1.1 Work system

Clear workflows for employees to follow: Most of the Heads of Department in cases A and D agreed that the existence of a clear work process enables them to easily identify the strategic work elements of that process. Without this identification, they stated, it would not be possible to successfully implement performance measurement.

'Not to mention the work process. This is at the counter; the back-office is another story. We need to think it early so it won't burden us later. If you talk about work process you have to really have a think

on it. As a leader, we have to ensure that the work process is efficient. If the work process has not been changed for two years, I guess it needs some changes. That is another very important at the operation so both the front and back office run smoothly' (BOP HoD of Case A).

'After the project has been secured, contract has been awarded by the government; I will escalate that to my project department. So the project department will be implementing the project. After implementation normally we have a warranty and maintenance. After implementation, we have to have warranty and maintenance. After project department has implemented the project, we have signed user acceptance test, it will be escalated to customer service department so they will do warranty and maintenance, until the project is finished'. (Maintenance Manager of Case D).

Muras *et al.* (2009) found that success in implementing a performance measurement system such as the BSC will be more likely if this is linked with the work activity processes at the operational level. The reason for this is that it enables the employees to understand the importance of their work processes or activities to the success of the organization. Thus, in this case study, the initiatives by some managers in providing a clear work process and identifying the strategic points with the active participation of their subordinates has promoted alignment of strategy at both corporate and operational level. The successful implementation of the PMS has relied on both bottom-up and top-down activities.

5.7.7.2.1.2 Work policy and procedures

Existence of targets for work processes: Krause (2003:5) claims that one of the common reasons for a failed PMS was the assumption that organization structure drives the adoption with consequent ignoring of the organization's work processes. Some interviewees in this study mentioned that it is important to identify and link the organization process with the outcomes as this creates meaningful and reliable KPI.

As mentioned above, the existence of a work system encourages the identification of KPI within the work process. The A.M.D. of case B said that by implementing standard operating procedures in the Accounts Department the company can now monitor every transaction. The ability to control funds in this way has helped them to turn around from being a loss-making concern to now being a profitable organization. Funds are now spent wisely and managers are made accountable for their spending. Each staff member needs to sign-off any documents related to any transaction that they are responsible for. This is to ensure that payment vouchers are signed and verified through proper supporting documents. This procedure is also practiced in case A and D, where signing-off documents or a voucher is a must to ensure accountability. The existence of a documented work system/process, as in the case of D, enables them to provide a better service to their clients (see Appendix 20).

'Especially at this time where number of transactions is a lot. We have to monitor closely. Before we can see the amount of work that is currently being done. It was only entered in the log book. But now we can see the amount of work in process and pending. We have records on the daily notes being received. It is now more transparent' (Agency HoD of Case A).

'But some process we can actually improvise for KPI' (Business Development HoD of Case A).

5.7.7.2.1.3 Updating work processes

The research revealed that many interviewees hold the opinion that updating work processes could contribute to the adoption proper performance measurement in the following ways:

Up-to-date work process: The Operations manager of case A stated that it is her practice to update their work processes to ensure their efficiency and effectiveness. The work processes are reviewed continually in order to amend or remove any unproductive procedures that might burden the employees. Current trends are one of the factors taken into account in this review procedure. For cases B and C, their work processes need to be in line with the requirements of external parties such as the visa approval authority.

'So basically, she gathers everything, she gathers the flow, system flow on our work. And then from there, if asked, can use, I won't change, maybe she change a bit to make it simpler. If simple, she makes it simpler. Then, there are flows that are lacking, she will add more flows, she corrected it or what' (Executive Officer of Business Operation Department in Case A).

The findings of Phillips and Louvieris (2005) showed that managing internal processes, as these case companies are doing, contributes to the adoption of a proper PMS. Earlier, Krause (2003) noted that where the emphasis was on business process rather than organization structure in the design of a PMS, more benefits in term of identifying reliable KPI accrued.

Incorporating feedback: The improvement of work processes should reflect feedback provided by the employees. The Operations Manager of case A stated that it was important for her to obtain feedback from her subordinates to allow her to make changes and improve the work processes and procedures. Both departmental and individual employee performance benefit from this and, in light of this, employees feel willing to offer their comments and suggestions.

5.7.7.2.2 Identified Barriers in Relation to Business Process

5.7.7.2.2.1 Absence of documentation culture

Difficulties in identifying key work processes to develop KPI: In case B some managers, including the Senior Accounts Officer, claim that there is no work manual available for them to follow. This claim is disputed by the A.M.D. who states that the company has informed the managers of the procedures that they need to follow but she agreed that these were not presented in written form. It is the responsibility of the relevant managers to ensure they understand the work process and communicate it to their subordinates. On probing the interviewees further, they did admit that they are aware of the procedures through this verbal communication and that members of staff endeavor to follow them.

Nevertheless, the lack of a work manual available to the employees is claimed to affect them in terms of identifying the strategic work processes that they need to identify their KPI. The Operations Manager of case A, the A.M.D of case B and the Operations Manager of case D all stated that, without the ability to identify key work processes, it is difficult to determine the proper KPI.

'Maybe at this moment we are lacking in our policies and procedures. But it has not been kept in writing' (MD of Case B).

'Staffs know. It's in the understanding. You don't have to do by the book bah. A matter of fact this is already their standard. He did last time give me. Under policy of Haji and Umrah. He put it in draft bah. All those he list are there. There are procedures' (AMD of Case B).

'We never have a set of work process, we don't have work manual. How we do thing based on experience, learn as you go. Yes we do have policies and procedures but we never had a work manual to say for example yes you are the counter staff so this is what you need to do... we don't have that. (SOP?)', 'This is where we try to document it. Because this document are like how you process any application; who is to process it and so on. Now slowly it been listed. But to say that we have official SOPs documents, we still don't have it'. (HR HoD of Case B).

'In term of work procedure we only have like opening hours is at 8 and closing hour at 6. That's it. There is no work manual' (Finance Manager of Case C).

Bourne et al. (2002:1299) indicated that difficulty in defining measures is one of the key issues that hindered the successful adoption of PMS. In this case study, it was difficult to identify the appropriate measures for the case companies because of the lack of understanding on the important work process by the management. This, in turn, affected the reliability of the KPI selected by the management and, as a result, it produced less meaningful measures that did not make sense to the employees. Thus, having a knowledge base to document organization work process certainly helps to encourage the adoption of PMS (Krause, 2003).

5.7.8 Summary of Drivers and Barriers of PMS Adoption

The following table presents the summary of themes identified during the interviews that either affect or do not affect the adoption of PMS in each of the case companies. The table is consistent with Table 34, which summarizes the performance measurement system based on the six 'best practices' criteria. This present table indicates that case D has the highest number of sub-categories of the influencing factors (net of drivers and barriers) followed by cases A, B and C respectively.

Table 34. Summary of identified themes of each factor affecting the case companies

Category	Force	Sub-categories	Case A	Case B	Case C	Case D
Corporate Governance	Drivers	CGd1	na	na	√	√
		CGd2	√	√	∞	∞
	Barriers	CGb1	na	na	√	√
Information Technology	Drivers	ITd1	√	∞	∞	√
		ITId2	∞	√	∞	√
	Barriers	ITlb1	√	√	√	na
		ITlb2	√	na	√	na
Organizational Culture	Drivers	OCd1	√	na	√	na
		OCd2	√	na	√	√
		OCd3.1	√	√	√	√
		OCd3.2	√	√	√	√
	Barriers	OCb1.1	na	√	na	na
		OCb1.2	na	na	√	√
Organization Strategy	Drivers	OSd1.1	√	√	√	√
		OSd1.2	√	√	√	√
		OSd2.1	√	√	na	√
		OSd2.2	√	√	na	√
		OSd2.3	√	√	√	√
	Barriers	OSb1	√	√	√	na
Management Style	Drivers	MSd1	√	na	√	√
		MSd2	na	√	√	√
		MSd3	√	√	√	√
		MSd4	√	√	na	√
	Barriers	MSb1	na	√	na	na
Human Capital	Drivers	HCd1.1	√	√	√	√
		HCd1.2	√	√	√	√
		HCd2	na	√	na	√
		HCd3	√	√	√	√
	Barriers	Hcb1.1	na	na	√	√
		Hcb1.2	na	√	√	√
External Stakeholders (ES)	Drivers	ESd1	√	√	√	√
		ESd2	na	√	na	√
		ESd3.1	√	na	na	√
		ESd3.2	√	na	na	√
		ESd4	√	√	√	√
	Barriers	ESbX	√	√	√	√
Business Process (BP)	Drivers	BPd1	√	√	na	na
		BPd2	√	√	na	√
		BPd3.1	√	√	√	na
		BPd3.2	√	na	na	na
	Barriers	BPb1	@	√	na	@

Keys: √ applicable to the case company
 ∞ partly applicable to the case company
 n/a not mentioned by the interviewees of the case company
 @ mentioned but not applicable to the case company

5.8 Ripple Effects of the Influencing Factors of PMS Adoption

Following the precept of Corbin and Strauss (1990), the final stage of data analysis in this research is to locate the core category, which represents the central phenomenon of the study, and show how other categories are related to it. In the next section, the ripple effect and the relationship between the major themes identified from the research findings is explained. The aim of this is to illustrate the linkages between these themes and also to justify how and why the factors related to the organizational strategy are placed at the core of all influencing factors.

5.8.1 The Relationships Among the Factors and Sub-Factors of the Driving Forces

Figure 41 indicates the relationship between the factors and the sub-factors of the driving forces. Appendix 21 explains the code used for all categories, sub-categories and the identified themes for driving factors.

Table 35 indicates the summary of the relationship between the eight factors. Organizational strategy shows the highest number of relationships with the other driving factors. Conversely, external stakeholders indicate the fewest relationships with the other factors.

Organizational strategy: Organizational strategy seems to affect the other seven factors identified during the interviews. There is a mix of influence towards and from the organizational sub-factors to sub-factors of the other seven influencing factors. From figure 40, it can be seen that, organizational strategy influences organizational culture, human capital, external stakeholders and business process. Meanwhile, organizational strategy is itself influenced by corporate governance, information technology, management style and the external environment.

A clear and transparent mission and vision encourages an open-door policy in the case companies and the existence of five-year plans in two of the companies encourages the management to clearly communicate the tasks and targets of each employee. Formal five-year planning also has a direct impact on the setting of targets to meet the requirements of external stakeholders, who include local and foreign governments, customers and suppliers and allows companies to impose targets on their distributors. A clear mission and vision also has a direct impact on employees' work flow.

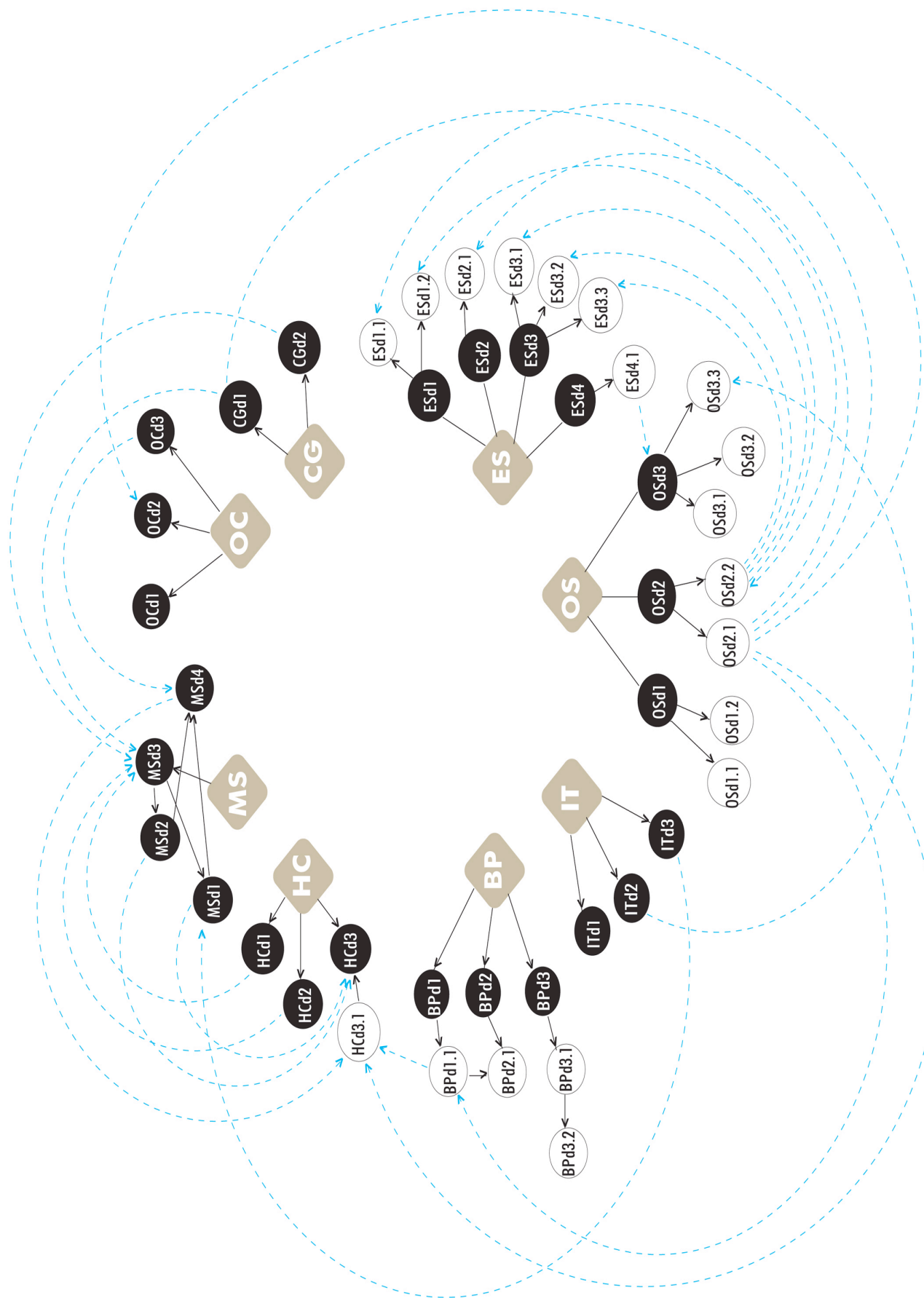
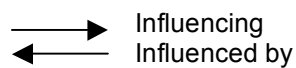


Figure 41. The Relationships between the Eight Major Categories of PMS Adoption Drivers

Table 35. Summary of the Relationships between the Driving Forces

Factors	OS	MS	HC	OC	CG	IT	BP	ES
OS		←	→	→	←	←	→	← ← → →
MS	→		← ← → → →	←	←	←		
HC	←	← ← → → →					←	
OC	←	→						
CG	→	→						
IT	→	→						
BP	←		→					
ES	← ← ← →							



At the same time, the high involvement of an owner in strategic planning activities creates a direct impact on the setting of targets and objectives. Monitoring of customer retention, product maturity and market trends also pushes a company towards clarity in its strategic thinking. A management that has a clear sense of direction is able to produce a clear policy, as shown in figure 41.

Management style: Management style has a direct influence on two other drivers of PMS adoption; organizational strategy and three sub-factors of human capital. Meanwhile corporate governance, information technology and the two other sub-factors within human capital clearly indicate a direct influence over management style.

The practice of open communication and respect towards their subordinates or the alternative authoritative style both have a direct impact on the development of clearly communicated targets and tasks to their subordinates. In both styles, the management team has frequent meetings, formal and informal, to discuss the targets and tasks for their employees.

A combination of high owner-involvement strategic level and low at operational level also leads to an overall sense of direction in the organization. This will eventually affect their strategy. Meanwhile the use of information technology encourages information sharing among the members of the organization and open channels of communication. In addition, qualified and experienced managers or a well-trained management team also help to create a clear sense of direction.

Human Capital: Human capital has relationships with three other driving factors of PMS adoption. The figure shows that human capital affects two sub-factors of management style and is, in turn, affected by three sub-factors of the same drivers. Human capital is also affected by organizational strategy and business process.

The literature indicated that management training together with the existence of qualified managers and external assistance would contribute to the adoption of PMS. The interviews did indicate that both management training and the existence of qualified manager(s) with vast management experience could assist in the adoption of PMS but it was also mentioned that having a clear job description and task for the members of the organization assisted adoption too. The question of how this happened then arises. Based on the feedback, this was made possible by having frequent meetings between management and subordinates, whether through an open-door policy or an authoritative management style. This was also made possible when the company possessed clear policies and work process.

Organizational Culture: Based on the information obtained from the interviews, organizational culture is only connected with two other factors; organizational strategy and management style. These two factors have been described above. In terms of organizational culture, the team work that is practiced in all four case companies encourages a good flow of information. In addition, frequent meetings are held to discuss projects and targets. All identified organizational drivers, such as the management's personal approach towards their subordinates; open-door policy and practicing teamwork are ingredients of successful buy-in to PMS by members of the organization. For most employees, this type of organizational culture is desirable. Nevertheless, open practice policy might not be possible if the company does not have a clear and transparent mission and vision in the first place, as indicated in Figure 40.

Corporate Governance: Corporate governance has an effect on two driving forces of PMS adoption; organizational strategy and management style. Even though corporate governance was not considered a central driving factor in influencing PMS adoption, good practice in corporate governance contributed towards the adoption of PMS as it enables the management to have a clear sense of direction. Such good practice also drives the company to institute proper strategic planning so that monitoring systems are in place.

Information Technology: This factor affects two other driving forces of PMS adoption in the case companies; organizational strategy and management style. Clear linkage of the customer database helps the company to monitor customer retention levels. Information technology facilitates this activity, allowing the customer service unit or department to respond promptly.

As mentioned in the previous section, information technology encourages sharing of information among the management and subordinates, which facilitates the management team and their subordinates in achieving their targets. These are some of the ingredients for adopting a proper PMS. As with corporate governance, this driving factor is not affected by any other driving forces, but rather IT contributes to the other drivers by facilitating their monitoring activities, such as customer retention.

Business Process: Business process is one of the newly identified factors that influence the adoption of PMS in service sector SME in Brunei. This factor is linked to organizational strategy and human capital. As mentioned earlier, business process drives the adoption of PMS through three main sub-factors, which are work systems, work policy and procedures and updated work processes. Clear workflow for the employees is one of the sub-factors that encourages the identification of targets and tasks for employees. However, it is clear that a proper mission and vision helps to create a clear workflow.

External Stakeholders: For the external stakeholder factor, there is only one connected driver of PMS adoption. One sub-factor of external stakeholders affects the organizational strategy and three sub-factors of organizational strategy affect the stakeholders.

The requirement to submit their five-year plan and certain other reports to the local government is one of the ways in which external stakeholders contribute to the development and, consequently, the adoption of PMS. Foreign government requirements and the need to monitor customers and suppliers are some of the stakeholder factors that were mentioned by the interviewees as forcing them to develop a proper monitoring system. Thus, good strategic planning at both corporate and operational levels makes all the monitoring activities possible.

5.8.2 Relationship between the Factors and the Sub-Factors of the Barrier Forces

Figure 42 indicates the relationship between the factors and the sub-factors of the barrier forces. Appendix 22 explains the code used for all the categories, sub-categories and the identified themes of the barrier factors.

Table 36 provides a summary of the relationship between the eight factors. As with the driving forces, organizational strategy displays the highest number of relationships with the other barrier factors. However, corporate governance rather than external stakeholders indicates the lowest number of relationships with the other factors.

Organizational Strategy: Organizational strategy influences six other factors in relation to lack of understanding of the company's mission and vision among the members of the organization. It is evident from the interviews that this stems, in part, from high involvement of the owner at the operational level. This was mentioned specifically by interviewees in case C. Although this practice had changed in this company at the time of the interview, it still affects the clarity of their mission and vision. When an owner is directly involved in daily operations they are taken up with the busy schedule of running the business and can forget to communicate the organization's mission and vision to the subordinates.

Limited information sharing, perhaps stemming from manual data entry systems, also contributes to this gap in awareness. Where there is low investment in I.T., backlogs of data arise and information is not communicated effectively throughout the firm. This factor also leads to a negative culture whereby information is a prized commodity which members become reluctant to share. A further consequence can be the setting of targets without the prior agreement of subordinate workers.

In addition, a lack of clear mission and vision make it difficult for the management to identify key work processes and thus difficult to come up with proper KPI. In the end, the management team imposes common industry KPI.

A further issue is lack of proper management training. As mentioned in the previous section, such training is usually task or product-specific, or it is too general to be useful in relation to performance measurement. If management teams were given training on management concepts and techniques to apply in their daily operations, they would be better able to understand the importance of communicating their vision and mission to other members of their organization and the value of proper performance measurement.

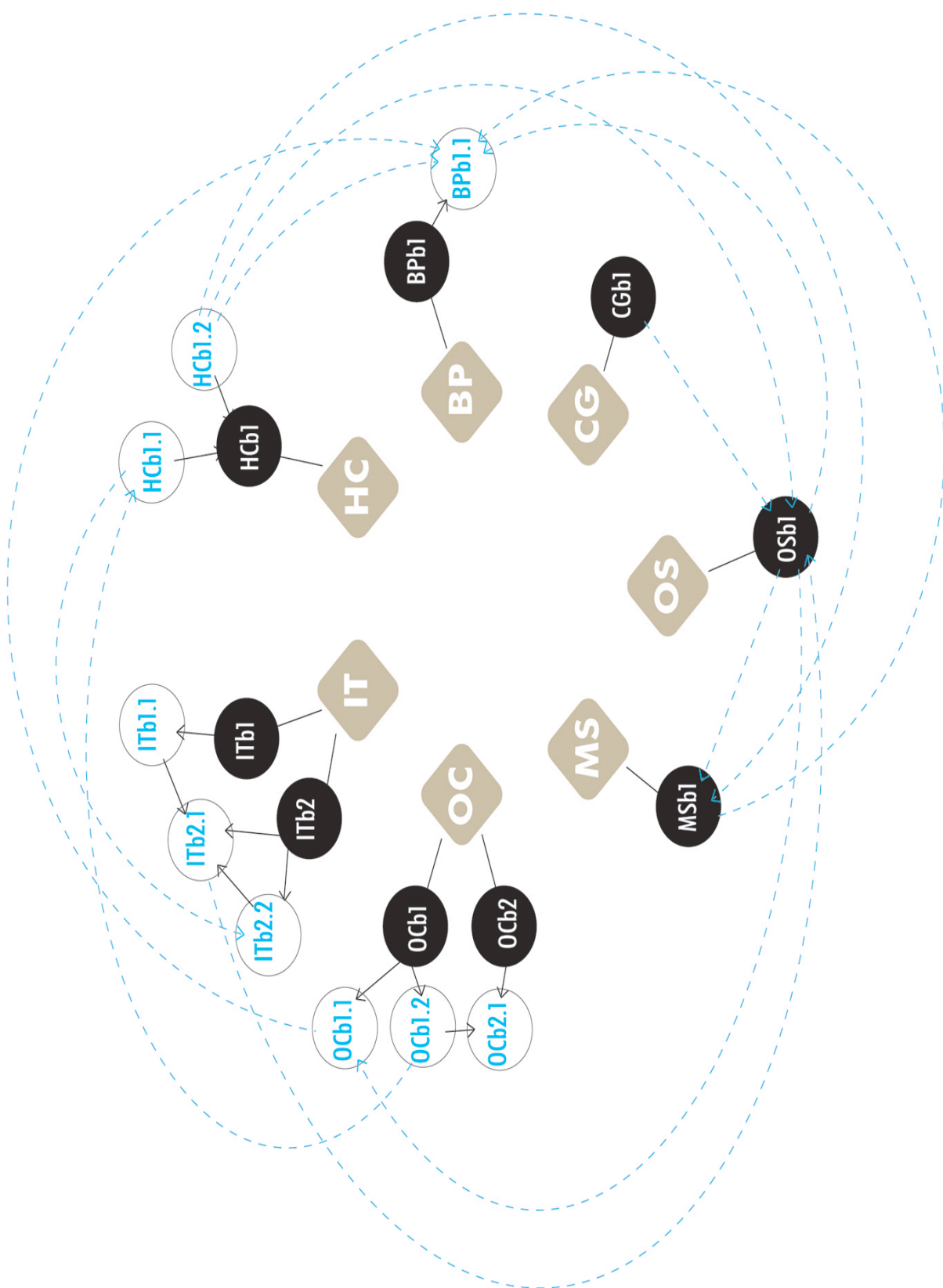


Figure 42. The Relationships between the Seven Major Categories of PMS Adoption Barriers

Table 36. Summary of the Relationships between the Barrier Forces

Factors	HC	OS	IT	OC	BP	MS	CG	ES
HC		→	→	←	→	→		
OS	←		←	→	→	→	→	
IT	←	→		← →				
OC	→	←	→ ←		→			
BP	←	←		←		→		
MS	←	←			←			
CG		→						
ES								



Human Capital: This factor affects or is affected by five other barriers identified during the interviews. It affects organizational strategy, information technology business process and management style. It is affected by organizational culture.

The issue of management training deficiencies was outlined in the section above. Another factor is the preference for public sector work, which leads to shortages of skilled manpower for SME. This, in turn, contributes to the development of backlogs of work, compounded by the inability of such firms to invest adequately in I.T. to improve efficiency. From the interviews it emerged that one possible reason for locals favoring government work is the sensitive national culture. A PMS will engender constructive as well as positive feedback for individual employees but in Brunei it is considered rude to draw attention to peoples' weaknesses. This sensitivity hinders the development and adoption of a PMS involving constant reviews and updates.

Organizational Culture: This barrier has relationships with four of the other factors. Both organizational strategy and information technology affect organizational culture, while human capital and business process are affected by it. Poor communication within an organization, resulting from factors outlined in the section above on organizational strategy means that corporate level strategy is not always aligned with operational strategy.

Information Technology: Information technology influences organizational strategy and culture but, at the same time, it is influenced by one of the sub-factors of organizational culture and human capital. As discussed before, IT barriers were divided into two main categories; infrastructure issues and cost. It is obvious that problems related to I.T. infrastructure in terms of the information-sharing required for PMS adoption can be easily resolved by the injection of funds. However, the IT infrastructure problem related to I.T. staff capacity is a more intractable issue in the short term as it is also an issue at the macro level of the economy. The lack of human resources in the market, especially local workers, leads to this second problem. Currently, most of the data entry is done manually (Cases A and B).

Business Process: The business process is affected by four other barriers to PMS adoption; human capital, organizational strategy, organizational culture and management style. For reasons described in previous sections, management teams have difficulties in identifying key work processes and this causes them to introduce blindly assigned targets. Hence, it is evident that the problem arising in the business process is not a stand-alone problem but is due to other internal organizational issues. If all of these other issues are not resolved, it seems that the effect on documentation of work process will be difficult to solve. Consequently, a proper monitoring system will be difficult to develop and adopt.

Management Style: As mentioned in previous sections, three other barriers to PMS adoption affect management style. Human capital, organizational strategy and business process are the factors that have a direct impact on management style. The recognized management style barrier also has an impact on the negative adoption of PMS. As the existing problem of targets being assigned without the consent of the members of the organization is not limited to management incompetency, but is also a consequence of the corporate governance structure, this has led to the assumption that a proper and formal monitoring system is not required.

Corporate Governance: This barrier factor affects only organizational strategy. As identified in the section on the latter factor, a high level of owner-involvement at the operational level can lead to that individual losing sight of strategic planning needs. When the owner himself does not practice a proper and formal PMS, it negatively contributes to strategic planning at all levels of management.

5.9 Chapter Conclusion

The findings of this chapter indicate that, in addition to the factors comprising the conceptualized framework developed in Chapter Two, there are two other factors which influence the adoption of PMS in service sector SME in Brunei. The findings from the qualitative research have allowed the relationships between the various sub-categories and themes of the main factors to be identified. The findings show organizational strategy as the core factor in both driving and blocking the adoption of PMS in service SME in Brunei. The next chapter discusses these findings and those of the quantitative research in relation to the existing literature in order to answer the two main research questions. The evaluation of the findings will bridge the gap identified in the literature and provide direction to other researchers aiming to develop understanding of PMS in similar contexts. It will also be of benefit to practitioners and academics within the country and the wider region.

Chapter 6:

Discussion

6.1 Introduction

This chapter discusses the findings presented in Chapters Four and Five of this research to answer the research questions stated in Chapter Two. The chapter discusses each of the proposed six best practices of Performance Measurement System (PMS) as well as the six influencing factors of adoption in respect of the case studies. The discussion has been arranged around the research questions.

Both the quantitative and qualitative findings will address the first research question. Additionally, findings from each case study will be compared with the conceptual findings from the theoretical research in Chapter Two, with the aim of forming an extension to the theory of influencing factors of PMS adoption among service sector Small and Medium Enterprises (SME). Amendments to the conceptual influencing factors of PMS adoption will be made in accordance with the actual findings from the case studies. The rationale for this is to substantiate the applicability of the factors of adoption in practice. This will answer the second research question proposed. The results should produce a tangible extension of the theory, which will be useful for managers/owners in service sector SME to consider in their attempts to develop their own PMS.

6.2 Discussion on the Level of PMS Adoption among the Service Sector SME in Brunei Darussalam

This section answers the first research question:

What is the current level of PMS adoption in Brunei Service SME? (Research Question 1)

Sixty-two participants responded to the survey. Of these, seventy nine percent represent locally-owned companies and the rest are either jointly or 100 percent foreign-owned. In order to answer the first research question, the six best practices of PMS found in the literature were used as a guide to determine the level of adoption in each firm, determined through a cluster analysis.

Segmentation of the sample, with cluster analysis, was performed to identify homogeneous groups of companies according to the relative weight of the six 'best practices' criteria in their overall performance measurement system. K-Means cluster analysis of three was used to determine the classification of companies. In the K-Means cluster analysis, the ANOVA

table (see Table 21 section 4.4) indicates which variables contribute the most to the cluster solution. Variables with large F values provide the greatest separation between clusters. Thus, the samples were clustered based on high levels of difference in the accountability of the system, its flexibility and degree of integration. Nevertheless, this does not mean that there are no differences between the three clusters with regards to performance measures, performance measurement bases or the performance measurement purpose. However, the mean values for the performance measurement purpose are high for all three clusters. This signifies that the firms' purpose in implementing their existing performance measurement system is basically the same.

There are sixteen, ten and thirty six samples in clusters 1, 2 and 3 respectively. Based on the means of each cluster, cluster 1, cluster 2 and cluster 3 can be described as having Advanced, Traditional and Balanced types of PMS respectively. A summary of the general profiles of the three-cluster solution is illustrated in Table 22 (see section 4.4).

The cluster distribution indicates that a large number of the sampled companies – 58 per cent - are at a balanced level of PMS adoption. Most of the companies, 36 in total, partially fulfill the six criteria of advanced PMS. Surprisingly, only 16 percent of the sample companies are still practicing a traditional type of PMS compared with the 26 percent which have already adopted advanced level PMS. The sample companies still utilizing traditional PMS have accumulated, on average, 3.55 of the overall PMS criteria score. Thus, even though they remain at a traditional level of adoption, there are some improvements and initiatives that the companies could take to move to the next level of PMS.

A shared characteristic of those firms at the lower level of PMS is that they have been in existence for more than 40 years (see Table 22 in section 4.4). These companies might find it difficult to adopt more advanced PMS due to the lack of experience and knowledge of innovative systems of monitoring performance, confirming the point made by Hudson et al (2001b) and Gadenne and Sharma (2009). However, this does not tally with the finding of Garengo *et al.* (2007) that mature SME are more likely than younger organizations to have an effective M.I.S. to drive implementation of PMS.

The majority of the owners of these companies (40 percent) have financial backgrounds (see Table 22 in section 4.4). Owners and managers of companies showing other levels of PMS tend to have administrative, management and technical backgrounds. Such backgrounds have contributed to the inclusion of non-financial KPI in their companies. Training on new management techniques and skills for the owners/managers of the mature companies would raise their awareness of the importance of non-financial KPI and help them to improve their PMS.

For the companies at the middle level of PMS, the reason they have not made further progress may be due to lack of resources such as funding, information technology and management skills. Hudson *et al.* (2001) noted that this was characteristic of many SME.

The criterion with the lowest rating for companies at this level is the accountability of their PMS (Performance measurement accountability - responsibilities and Performance measurement accountability - stakeholders) (See Table 21 in section 4.4). This means that, in the development stages, their initiatives were lacking in contributions from both within and outside the organization. It is probable that the managements only partially shared information with each other and with the subordinates and that proper teams, as advocated by Roman Schneider and Vieira (2010), were not appointed to oversee the design and implementation of their PMS. However, those at the middle level have the potential to move up to the next level if these criteria are fulfilled. The other criteria will then follow suit as there are positive relationships amongst the criteria, as can be seen in Table 19 in section 4.3.

The first impression is that all three clusters have quite similar patterns of performance measurement system design. Values assigned to specific aspects of the best practices are either relatively the same (see Performance Measures Dimension, Performance Measure Base and Performance Measurement purpose) or relatively different (see Performance Measurement Accountability, Performance Measurement Flexibility and Performance Measurement Integration). It seems that some criteria of performance measurement system best practices are either the most or least widely practiced by all managers, except that the intensity with which the overall practice of a performance measurement system is expressed differs among the clusters. Nevertheless, it is not a surprise that some companies in Brunei are actually practicing advanced PMS as there is an explanation for such a pattern. In Brunei, International Standard of Operation (ISO) is not new. It has been practiced in the private sector, especially by those companies that are in oil and gas related industries. We will now look into the six best practices in depth through the experience of four service sector SME in order to further understand their current practices.

Subsequent to the identification of PMS levels in service SME in Brunei, the ANOVA testing investigated if these three clusters practice different organizational approaches. The advanced PMS group seems to differ from those companies still practicing traditional PMS in terms of their organizational culture, organizational strategy, human capital, management style, information technology and corporate governance. However, the advanced and balanced PMS groups only show partial differences.

The discussion of the six criteria follows the conceptual framework of the 'best practices' guidelines for service SME developed from the literature review. The discussion starts with

the purpose of measurement in order to understand the rationale behind the adoption of PMS. The bases of PMS are then discussed so that the criteria the case companies use in developing their PMS are made explicit. The bases are supported by the flexibility and accountability of the system and these two best practices follow. Thereafter, the dimensions of measures are analyzed and finally, the integration of the PMS into the other management systems of the firms is looked at. As identified in Chapter Two, such integration plays an essential role in the success of PMS adoption and is the most appropriate factor with which to summarize the discussion.

6.2.1 Purpose of measurement

The empirical evidence from this study indicates that the reasons for implementing performance indicators depend on which layer of management they are employed in. For cases A and B, the main purpose of their PMS is to report their annual achievements to the Boards of Directors. This appears to be in line with the findings of commentators including Kaplan & Norton (1996), Neely *et al.* (1997) and Da Lima *et al.* (2009) that traditional systems are financially focused and aim to root out and penalize underperformance. This appears particularly true of case B, where the focus of the strategy is to cut costs.

Philips & Louvieris (2005) investigated the reasons for adoption of PMS in a sample of U.K. travel and leisure companies and found this was strongly motivated by the desire to improve the quality of their customer service and customer retention rates. However, despite operating in the travel and tourism sector, the motivation of case B is cost control. The Assistant M.D., who is also the Finance Manager, has implemented various cost control mechanisms at managerial as well as staff levels. This makes the company less able to direct their PMS towards service quality improvement. The company may well be satisfied with their system though as it has been successful in turning them from loss to profit.

Nevertheless, at lower levels of management in cases A and B, performance measurement in the form of the annual employee appraisal contributes to the continuous improvement of performance and the development of the skills of the individual employees. In case D too, employees are evaluated against their given targets and then recommendations for further training are made, if relevant. At the operational level then, in these three companies, the PMS is closer to fulfilling the three purposes outlined by De Toni and Tonchia (2001) – monitoring activities, developing human resources and benchmarking.

The purpose of measurement in case C is quite distinct in that their focus is on quality control and improvement together with enhanced customer satisfaction. Fitzgerald and Moon (1996) mentioned that the heterogeneous nature of the service industry results in a unique performance and experience of the service. Case C provides a pure service, with no product attached, and this accounts for the nature of their PMS. The evidence from case C

confirms the findings of Karassavidou *et al.* (2009) in that, in a service-oriented business, in this case the Greek NHS, the purpose of PMS is to improve the service, taking corrective action where necessary.

Anand *et al.* (2009) describe the purposes of contemporary PMS as innovation and enhancement of processes. In all case companies, they claim that the purpose of their system is to improve processes and oversee strategy and it is evident in B and D that the PMS does not simply measure goals but is also used to identify and repair strategic defects. In cases A and C though, the PMS lack mechanisms to evaluate the current strategy of either firm.

6.2.2 Bases of measurement selection

Bititci *et al.* (1997) discussed the need for any PMS to be part of the whole system of the company. For such alignment to occur, top level management needs to ensure that the mission and vision of their organization is communicated clearly at all levels. In addition to a clear definition, Hudson *et al.* (2001b) state that the organizational strategy needs to be agreed within the company. It is not evident that this is so in the case study companies. The central role of the Finance Manager in submitting strategic objectives during management meetings in cases A, B and D means that the development of strategy is not as effective as it could otherwise be. This system creates a tendency for the firms to focus more on financial targets and less on operational ones at corporate level.

The basis of selection of 'official' measures follows a top-down approach and the necessary internal feedback is missing. Nevertheless, through the existence of 'unofficial' departmental measures adopted to achieve targets and the system of annual employee appraisals in cases A, B and D, there is alignment of strategy at corporate and operational levels. In case C, the absence of any emphasis on financial indicators and the easy flow of communication in the company ensures there is no issue of misalignment.

It was not the aim of this research to test the effect of the different types of service process on performance measurement. It should be noted though that the literature provides conflicting evidence. Fitzgerald *et al.* (1991) found that service process type does influence decisions on measurement selection but, in a later study of 2010, Amizawati Mohd Amir claimed that the strategic objectives of the firm had a greater effect. The empirical findings of this research suggest that the case companies have considered service process in determining their measurement systems. Case C, particularly, focuses on non-financial measures appropriate to the purely service-oriented nature of its business. While the other case companies can be said to have a 'product' attached to their services, none of them are classifiable as 'mass' services, which Auzair and Langfield-Smith (2005) state to be more amenable to measurement.

Overall, it is reasonable to suggest that corporate strategy is the main basis of performance measurement in the four case companies. The creation of 'unofficial' targets at operational level aids fulfillment of official targets set at corporate level.

6.2.3 Accountability of PMS

None of the case companies have the type of proper working team to oversee their PMS activities which Parsons (2007) recommended in his conceptual paper. Instead, they have given the responsibility to individual managers of departments and units, which is in conformity with the recommendation of Khadem (2008). In cases A and D, the higher level managers are those responsible for monitoring the higher level measures. In practice, the priority of the respective management teams is to achieve their set targets and prepare their reports on the same. Hudson *et al.* (2001b) explain that this situation arises from the lack of trained and skilled personnel in SME.

The creation of working teams, with representatives from each department, to oversee the PMS project recommended by Roman Schneider and Vieira (2010) is a possible solution in the four case companies. However, in their case study, the idea was only made possible by the action research of the authors in the case company. Again, the lack of resources evident in SME generally and our case companies specifically, brings into question the feasibility of PMS working teams.

In three of the case companies, A, B and D, the existence of annual employee appraisals ensures that individual performance measurement is broadly in line with organizational strategic objectives. The members of the organization have their attention focused on the targets given to them. However, there are loopholes in the system in that the procedures for measurement are not clearly defined and are often at the discretion of individual managers. This is particularly so companies B and C and is also partially true of A.

Basu *et al.* (2009) found that input from both external and internal stakeholders was needed to make performance measurement truly accountable. Although the case companies did not consult their external stakeholders on the details of the PMS used internally, it is the requirements of those stakeholders that have influenced the companies to produce the necessary metrics for performance evaluation and to abide by their use. The findings of this research show almost a reverse of the process outlined by Basu *et al.* These cases show greater similarity to the experience of the wind-farm company in Roman Schneider and Vieira's 2010 study. In that study, it was new government regulations that required the company to take account of their external environment and community in their Balanced Scorecard. In addition, the purpose of the implementation of PMS in Basu *et al.*'s study differed from that of the Brunei companies. In their study the Balanced Scorecard was used for large-scale project management.

Despite appropriate people being accountable in our cases A, B and C, there is no overall identification of the causal relationships among measures in their systems. The fact that case D is more advanced in this respect is probably due to the project-based nature of their business model. For company D, project teams identify various KPI to link the measures used for monitoring a project. In the other case companies, the development and assignment of performance measures are accountable to relevant internal and external parties but the responsibility is an individual rather than a team one.

6.2.4 Flexibility of the PMS

According to the research findings, the PMS of cases A, B and C do not seem to be flexible enough to take into account any change in the environment. In comparison with interviewees from case D, staff members interviewed in the other companies commented that it is not easy to initiate and implement change. Nevertheless, in all the case companies there was partial agreement with the notion that their PMS is graphically and visually effective, a factor considered important in creating easily accessible communication of information (Cocca & Alberti, 2009 and Smandek *et al.*, 2010).

For cases A and B, any changes in their top level KPI need to get prior approval from the Board. However, at the departmental level, the performance indicators are actually easy to change as the managers themselves are the creators of the unofficial, operational measures. Even though the managers claim that it is difficult to change the performance indicators, this is only in relation to the corporate level indicators and the lower level indicators can indeed be described as flexible. The only hindrance to this is if the individual manager fails to be proactive in relation to changes in the environment. Nevertheless, as illustrated in the case study conducted by Hanson *et al.* (2011), the 'unofficial' metrics or measures created by middle management tend to create either gaps or conflict between the corporate and divisional goals. This is especially true if the main reason for these measures is unofficial and arising from changes to the organizational strategy. If results prior to changes in corporate strategy are favorable, middle management tends to retain or re-name the measures to reflect their previous success. However, the case studies in Hanson *et al.* (2011) were made in order to understand the effect of changes at high corporate level on the alignment of metrics with the operational level.

Cocca and Alberti (2009) and Hudson *et al.* (2001) both recommend that the PMS for SME should be flexible and easy to change quickly so that changes in the environment can be taken into account. However, at the strategic level, cases A and B might find it difficult to change their PMS in the short-term due to the involvement of the BoD. There is also potential for misalignment of measures to result in these companies if the managers at operational level initiate change. In cases A and B then, their corporate governance structure can be seen as a barrier to flexibility.

In contrast, in case C the lower level management might be able to change their measures by directly informing the top management of the need for such change. This is made possible by the open-door policy practiced by the top management of the company. The structure of case D also allows flexibility in their PMS.

As the research case companies are service providers, they face more volatile and uncertain external environments compared with manufacturing companies. Furthermore, the smaller the company and the more service-oriented they are, as in the case of company C, the more volatile their external environments are likely to be. Therefore, these companies need to have a performance measurement mechanism that is able to interact with their external stakeholders in order to get up-to-date information so they can change their performance measures in response. Despite the ease of communication in the company, case C does not seem to fulfill this requirement. It is our opinion that the lack of management expertise in measurement systems is the cause of this inflexibility.

In terms of the representation of information, graphs and tables are prepared by departments and units in all four organizations. These are usually presented during the management meetings. A PMS that can be graphically presented enables the management team to pin-point exactly those measures that need improvement. However, the case companies would be well-advised to take this a step further by having proper templates, such as the BSC cockpits shown in Smandek's (2010) research findings. Such a move would also require a proper 'working team' though.

At first glance, the PMS in cases A and B seems to be flexible as they have the ability to trigger the system for managers to react to external changes, but there is insufficient autonomy for them to react fast enough due to the necessity for the BoD to approve any major changes. Thus, for the system to be truly flexible, it would require the flexibility on the part of the decision-makers to make instant changes to reflect market activity in their strategy.

6.2.5 Dimensions of measures being used

All of the case companies use both financial and non-financial indicators, even though the interviewees did not say so. For example, cases A and B claimed that they use only financial indicators but, upon further investigation, it was found that these companies use non-financial measures too in monitoring their operational activities. The reason for the non-reporting of these measures is because these indicators have not been made official at the corporate level. Non-financial indicators have not been taken seriously by the top management compared with financial indicators, a point made by Kaplan and Norton (1992) and Neely *et al* (1997). Both sets of authors referred to the top-down flow of information and lack of internal feedback on performance indicators. The top management has failed to

realize that these 'unofficial' non-financial indicators contribute to the achievement of their 'official' financial indicators. Consequently, non-financial indicators have not been awarded an important role at the strategic level.

Furthermore, the main objective of the Boards of both companies is financially oriented. Financial ratios and variance analysis are still widely practiced and used as reporting tools by each Board. In these companies, the Boards of Directors are answerable to local government auditors and the reports form part of the audit. However, as Ghalayini *et al.* (1997) found, this type of performance measure offers information that is often too old to really useful.

Nevertheless, it is inappropriate to label the PMS in these two case companies as traditionalist as they are incorporating non-financial measures in practice, although their use is informal and overlooked at management level. Such measures have been introduced at the operational level by lower level management and this could be described as a 'bottom-up approach'. This finding supports those of Hanson *et al.* (2011), which showed that middle management tends to have the power to influence the choice of measures in their department or unit. The most logical reason for this is the lack of emphasis at the strategic level on developing the indicators that are needed in order to achieve the financial targets. As a result, the lower level management has to develop the necessary indicators in order to help them monitor their daily operations and, ultimately, achieve the financial targets that are being imposed on them. These findings are in line with those of Sole (2009), who pointed out that different levels within an organization will need different information and consequently will require different measures.

In comparison, in cases C and D it was claimed that non-financial indicators play an important role at both strategic and operational levels. The M.D. of Case C mentioned that her company has neither financial targets nor an annual budget. This is probably due to the involvement of the owner at the operational level. As several commentators including Gubitta and Gianecchini (2002) and Garengo and Bititci (2007) have noted, an effective PMS becomes more imperative when an owner relinquishes some of the control to outsider managers. Furthermore, in this company there seem to be few non-financial indicators either. The one mentioned is the quality of the service provided for both students and higher education institutions. However, there is no proper mechanism to measure this indicator. Lovelock *et al.* (1999) commented on the difficulty of measuring the service experience, noting that the provider has little control over the output of the service. Any attempt at measurement will not produce the same precise results as can be obtained with physical products.

The lack of focus on the financial performance of the firm found in case C is not in line with the claims of Kaplan and Norton (1992) about traditional measurement systems. Indeed, this firm displays the opposite behavior. One reason that may account for this is the financial backing received from the parent company. Case C was originally established to provide the M.D. with a business which might aid human resources development in the country. The money was provided by her brother-in-law, the owner of a multi-million dollar business. It could be said that there is a charitable purpose behind the firm and that is why their focus is on 'reputation' rather than profit. Nevertheless, it would be helpful for them to have a mechanism to monitor their reputation.

For Case D, both financial and non-financial measures are used to monitor their performance. These measures have been made official by the top management and communicated to the members of the organization. There is a clear balance between the financial and non-financial measures in the evaluation of their overall performance. This is the result of their adoption of the measurement system that they inherited from their previous owner, Ericsson Technologies. There was an external influence which encouraged them to adopt balanced KPIs. This is in line with points made by and Turner *et al.* (2005) and Garengo *et al.* (2007) about the impetus provided by external stimuli and advisors.

Based on the research findings, three of the four case companies actually use both financial and non-financial indicators, even though top management is not necessarily conscious of the latter. The non-financial factors are apparent at lower levels in the organizations and help to achieve departmental and unit level targets but they are not linked formally to the financial indicators transmitted by senior management. As Hanson *et al.* (2011) pointed out, the official and unofficial metrics or measurement systems will always be present and consequently, the case companies need to be cautious and aware of their interaction with each other. Drucker (1990) and Neely *et al.* (1997) found that there is often little awareness of the cause and effect relationships between the tangible and intangible factors which affect the performance of an organization and this is apparent in these three case companies.

Although it was stated in all companies that there are non-financial objectives at the corporate level, these are not quantified. Amizawati *et al.* (2010) found that their sample service businesses had performance measures dominated by financial indicators and lacking in internal measures. However, these findings were based on differently sized service firms rather than SME so may not support the findings of this study.

6.2.6 Integration of the PMS

In all of the case companies there is a dynamic relationship among different departments or units in their organization. All departments have their own function that either supports or is supported by other departments or units. The general opinion of the interviewees in all the

case companies indicated that any improvement initiatives were adopted for the benefit of the whole organization.

Even though the interviewees indicated that there is a relationship amongst different departments, the performance measurement system itself is not properly integrated into the whole organization. This is due to the lack of I.T. support, a factor that forces them to use manual systems to integrate performance measurement with other management systems. For example, employee performance evaluation is still done manually in all four companies and this is linked manually with the performance measurement system. This finding is the same as that of Gomes *et al.* (2011) in their sample of Portuguese companies. The authors identified deficiencies in the support the performance information system could provide in producing relevant measures.

Different performance reports can only be partly communicated and accessed simultaneously in cases A, B and C, a practice that contradicts that recommended by Cocca and Alberti (2009). Case D has an automated monitoring system but the other companies lag far behind in terms of their I.T. systems. As mentioned earlier, Case D is an I.T. solutions company that develops software for their clients. The existence of qualified and I.T. knowledgeable employees has helped them to develop a performance system that can be accessed easily by various management levels.

With the exception of case C, all the company interviewees agreed that their performance measures are linked to their rewards system. This is one of the characteristics that will produce an effective PMS (Tung *et al.*, 2011). Cases A, B and D have well-structured employee performance evaluation systems that have been in operation for many years. They use this to evaluate their employees and award bonuses at the end of the year. On the other hand, case C does not have performance appraisal for their employees. This might be due to the smaller size and wealth of case C compared with the other companies. The payment of financial bonuses may not be feasible in company C.

Case D seems to fulfill the requirement for a PMS to be integrated into the whole organization management system, as De Toni and Tonchia (2001) among others have recommended. This is only achievable with the support of proper information systems, which case D possesses. The partial integration witnessed in case A will affect the success of their PMS, proving Bititci *et al.*'s (2002) point that failure of PMS comes from the static nature of the system itself and a lack of integration with the I.T. infrastructure. Companies A and B might be financially capable but they are still lacking in I.T. expertise. It might be advisable for these firms to employ an external I.T. expert to assist them to develop an automated and integrated PMS like that of case D. Alternatively, they could buy a ready-made PMS that could be integrated into their management system like that described by

Meeking *et al.* (2009). In that case study, the purchase and installation of performance management software brought about significant organizational improvement. Nevertheless, this approach is only possible if such software is readily available in the market.

6.2.7 Summary of Discussion on the Level of PMS Adoption among the Service Sector SME in Brunei Darussalam

Overall, Brunei's service sector is moving towards more advanced PMS. Most of the mature businesses and those with senior personnel with financial backgrounds are still practicing the traditional PMS. However, newly established companies are already either at the middle or advanced levels of PMS. As stated earlier, more than half of the sampled companies from the survey data are at the middle level.

Although all of the four case companies have developed their own PMS, none has followed the 10 steps and processes for designing a PMS recommended by Neely *et al.* (2000:1139). An I.T. company shows the most mature PMS while the smallest of the companies, which specializes in education placement, has the least developed.

Analysis of the 'best practices' criteria indicates that case D has the most advanced PMS followed, in order, by cases A, B and C. The latter companies still employ a balanced performance measurement system, based on the criteria (refer to Table 38 in section 5.1).

Elements of the six best practices identified and represented in figure 12 were found in all four case companies. However, the practice of integrating the PMS with other Management Information systems and supporting it with appropriate investment in information technology and the accountability of the system in each organization were notably weak. The operation of the other practices depended greatly on the level of the organization examined, with informal and unofficial measures in force at lower levels supplementing some deficient practice at the top layer of management. The six best practices are retained in the re-drawn conceptual framework as the empirical evidence supports their validity.

It is important to understand the reasons behind the factors preventing the sector from moving to the next level of PMS. In addition, it is also necessary to investigate the factors that have helped those at the advanced level of adoption to reach that stage. The analysis of these factors in respect of the four case companies is presented in the next section of this chapter.

6.3 Discussion of Influencing Factors of PMS Adoption in the Four Case Studies

This section comprises the findings on PMS adoption based on the data collection and analysis for this research. It answers the second research question:

How do organization contextual factors influence or hinder the adoption of PMS by service sector SME in Brunei Darussalam? (Research Question 2)

As explained in Chapter Four, during the data collection process the interviewees were asked to express their perceptions about the major factors which have influenced the move towards their firm adopting their own PMS. The process of the interview meeting provided an opportunity for the interviewees to express their opinions. The interview questions also provided a chance for both the researcher and interviewees to discuss all their concerns about and experiences of the influencing factors, based on the conceptual framework. During the interviews with the twenty nine participants the current PMS of their respective companies was examined together with the factors that have driven or hindered the adoption process.

The findings from the interviews indicated in chapter 5 show the relative importance of each influencing factor on the adoption of PMS. The empirical evidence also indicates two additional factors that contribute to adoption; external stakeholder requirements and business process. The discussion of the research findings will begin with organizational strategy because of the finding presented in Chapter 5 that the existence of a clear mission and vision is critical for the adoption of a PMS. This is followed by discussion of management style as this is the second greatest influence on the other driving factors of PMS adoption. As human capital has a relatively strong influence in terms of hindering the adoption of a PMS in the case study companies, this is addressed next. The weighting of the remaining factors in terms of their ripple effect on other factors is equal (see figure 40 in section 5.8.1) so there is no significance to their ordering in this section. The final factor to be discussed is the role of external stakeholders because this factor has only a positive influence on the adoption of PMS and it has the lowest influence on the other factors. The discussion of the influencing factors of PMS adoption is based on a re-organization of the conceptual framework of PMS adoption level (see figure 12 in section 2.6.3) as a result of the empirical findings and analysis of the relationships between the factors.

6.3.1 Organizational Strategy

As outlined earlier, all the case companies prioritize the maintenance of their reputations, probably as a result of the high levels of competition in such a small market. Their efforts are largely concentrated on the local market, with the exception of case D, which has

recently been attempting to tap into overseas markets, notably the Indian market. Case B was aiming to tap into the regional market for Hajj and Umrah packages but, due to the strict visa regulations enforced by the Saudi Immigration Authorities, this objective has never materialized. Meanwhile, cases A and C focus purely on the local market. In such a micro-economy, with a population of less than half a million, the market volume for these four companies is quite small and competition from other players within the country is getting tougher.

In addition to safeguarding their reputation in the eyes of the public, the M.D.s of the companies also spoke of the need to uphold government regulations. A monitoring system such as a PMS will ensure a check is kept on their reputation. This finding seems to confirm those of Amizawati *et al.* (2010) on service organizations in Malaysia. Their research findings indicated the existence of a relationship between contextual variables, such as high levels of competition, on the PMS attributes of their sample. Their sample, however, included a mix of different sized companies within the service industry and the context of their study was much larger in terms of economy and population. It is not clear, therefore, how transferable the findings are to this study. Nevertheless, the empirical evidence of this study does support the notion put forward by those authors and by Fleming *et al.* (2009) that there is a positive relationship between choice of strategy and PMS practice.

In the four case companies, the interviewees were not able to clearly explain the methods or measures used to track the reputation factor. The only mentioned indicator was the quality of their service determined through customer feedback surveys. However, they are still lacking the capability to quantify these measures despite their claims that they do this. Nevertheless, it would be incorrect to say that the four companies ignore the non-financial measures in their strategy formulation as actions at the operational level suggest that such measures are considered. However, metrics to quantify these intangible measures are needed to make them easier to monitor and to communicate throughout the organization as Henri (2006) suggests.

Saunders *et al.* (2008) discuss how clear communication of the company's strategy to the lower levels of the firm will improve buy-in to the strategy. Each company operates a service-focus strategy and seems to have a clear sense of the direction they want to head in. As indicated in Chapter Five, the companies have their own mission and vision statements but the empirical findings show that these only reflect defined financial objectives. The fact that non-financial objectives are not quantified or clearly defined confirms the findings of Gomes *et al.* (2004) that managers tend to measure the elements that are easily measurable rather than those that really need to be measured. This has produced the lack of clarity of the current formal PMS. Consequently, the lower level management creates informal measures in order to achieve their ends. This is not

necessarily bad, as Hanson *et al.* (2011) showed. Their findings recommended an alignment model that allows for different mechanisms in order to achieve the same ends. According to the survey carried out by De Waal and Counet (2009), the significance of this deficiency is that, without the mission and vision being clearly understood throughout the organization, the developed KPI will not be relevant.

The case companies need to find methods to quantify and define their intangible measures to allow them to identify the critical success factors which allow the development of KPIs, as the empirical findings of Quesado and Gazo (2007) have shown.

Case B practices a cost-reduction strategy. The Assistant M.D. has a strong financial background and is the dominant player in management meetings. The result is that the company's KPI focus on financial measurement at the expense of non-financial and the cost-reduction strategy obscures the other objectives of the firm. In Hudson and Smith's 2007 study, they observed that the composition of the PMS process team influenced the strategic priorities of their case SME. The experience of case B confirms this finding even though, as discussed earlier, in our case SME there are no formal working teams for PMS initiatives but rather the responsibility lies with individual staff members.

In contrast, in cases A and D there is a more balanced distribution of power during management meetings. The management team that is responsible for monitoring performance is composed of managers and heads of department from finance, operations and other supporting units. Nevertheless, financial measures are still the main KPIs at corporate level.

The empirical findings of this research indicate that the existence of business intelligence and a clear policy of customer service orientation have an effect on the adoption of PMS, either in terms of PMS attributes or the whole system. At the same time, this research also indicates that the main reasons for failure of PMS adoption are deficiencies in the mission and vision of the organizations and the communication of this throughout the organization. These findings are supported by and confirm previous findings in the literature. The only issue is that the context of this research is not exactly equivalent to those of the previous research.

6.3.2 Management Style

The authoritative style of the Assistant M.D. of case company B has been remarked upon previously in this study. Initially, such a style was required to make the company profitable and it was successful. However, five years on the same style still operates in this organization. Further analysis found that this is partly because the initiatives introduced by the A.M.D. have taken longer to implement than she expected. She has been faced with the

task of restructuring the company's business process and she began by introducing financial control measures. There was no consultation process on these measures. Thus, a top down approach of PMS has hindered buy-in to the system by her subordinates. As Burnes and Cooke (2012) mention, introduction of new rules and regulation in an organization does not necessarily create positive behavioral change. It has to be accompanied by more participative tools, techniques and ethical values as exemplified in the organizational development (OD) approach recommended by Burnes and Cooke (2012:1418). The more stakeholder-based approach which Micheli *et al.* (2011) suggest could also help to avoid lack of use of the PMS.

At present, procedures for the operational aspects of the business are being developed. This manager has found it difficult to change the way the subordinates think and move them on from their old government worker culture. Commentators such as Neely and Adams (2001), De Waal (2002) and Franco- Santos and Bourne (2002) have noted that resistance to a PMS can arise when the workers see it as a means of management control, which seems to be the case here. Interviews also revealed dissatisfaction with the authoritative style of the A.M.D. on the part of Heads of Department too. This could stem from the control that the A.M.D. exercises on the information that goes to the Board of Directors. Hudson and Smith (2007) found that it is common in SME for one person to monopolize control, as seen in case B.

Although Garengo and Bititci's findings from their 2007 case study indicate that an authoritative management style will drive the adoption of a PMS, they also noted that, to keep the system functioning, a change to a more democratic style which focuses on achievement is necessary. It seems that the A.M.D. of case B is aware of this requirement but has not yet implemented it and the PMS initiative seems to operate as a system for penalizing employees who do not reach their targets. There is a bonus system attached to the annual employee appraisal and this serves to monitor rather than to promote improvements. This finding is in line with those of Procter *et al.* (2007) who found that the existence of a performance related pay scheme does not necessarily help to change the employees' work culture. The authors felt that the main reason for this might be a lack of confidence in the system itself. The interviews revealed that the managers interviewed were themselves not satisfied with their current appraisal system as most of the criteria are quite subjective and open to different interpretations. Clear and quantifiable criteria are necessary to change the perception of the annual appraisal system.

The findings of Bititci *et al.* (2004) were based on action research methodology. In contrast, it was not the intention of this research to understand changes in the culture of the organizations over a period of time hence it has not been possible to investigate the outcome of the changes to the employee appraisal system which were being undertaken at

the time of the interviews. The Assistant M.D. and the management team claimed that these changes were designed to make their system more improvement-oriented.

In the other three case companies, the management style is consultative and cases A and D have proper, mature PMS. In both companies, the influencing factors identified by Saunders (2008:1107) such as informal communication, trust building and promoting good values are evident. Both Managing Directors have wide experience in their respective industries and the confidence this affords them means that they are not afraid of open dialogue. The experiences of these two companies confirm Garengo and Bititci's view that this management style helps to maintain a PMS. However, it is not possible to comment on the style of management that was in practice during the initial inceptions of their PMS initiatives as this was not the objective of this research.

Case C also has an open-door policy with members of staff but other factors have affected their ability to adopt a formal PMS. One of these was explained in the section on corporate governance and the others are lack of expertise and funds. The Operations Manager of the firm recognized the value of a formal system which could monitor their performance systematically but the empirical investigation found that the organization saw no pressing need for a complex PMS because of its small size. Although Garengo and Bititci (2007) noted that company size was a contingency factor affecting adoption of PMS, no further investigation of this point was conducted in this study.

The empirical findings of this research show that management style only partly influences the adoption of PMS. Case B would seem to confirm De Waal and Counet (2009:378) in their factor analysis on expert opinions on PMS, which showed that an incorrect management style can lead to an immature and poorly-functioning PMS. Bititci *et al.* (2004) found that companies successful in implementing PMS did witness a change of management style which affected the overall organization culture. The companies that did not proceed with this change were not as successful. The findings of this study do confirm a relationship between management style and organization culture but in the reverse direction to the cited study.

6.3.3 Human Capital

Bourne *et al.* (2005) pointed out that the right level of understanding of performance measurement is a prerequisite for successful implementation of a PMS, confirming the earlier findings of Kaplan and Norton (1996) and Richardson (2004) on the importance of training for managers and staff in this area. As mentioned in a previous chapter, managers in cases A, B and D have attended seminars and courses on management concepts, either within their companies or externally. Case C, however, is not in a financial position to offer this kind of training. They do not charge their student clients for the services of their

counselors nor for the use of their facilities. In addition, many of the staff members are foreigners on two-year contracts, and it is possible that the owner and Operations Manager feel that there would be no long-term benefit from investing in staff training. Consequently, human capital is limited in relation to expertise. As mentioned in the previous section, they have chosen not to exploit the I.T. knowledge of one of their staff members. These factors, among others, have meant that the company has not developed any systematic form of performance measurement.

Although cases A and B do train their managerial staff, the content of the training seems to be insufficient for the management team to concentrate on their PMS initiatives. Their claims to understand the concepts of the BSC are not evident in practice. In Sousa *et al.*'s 2006 research into performance measurement in 52 English SME, the statistical findings indicated that lack of leadership training was the fifth most significant obstacle to the adoption of new measures. Most of the top managers in cases A and B claim that they would need the help of outside expertise to review their PMS. This reveals some dissatisfaction with their present systems but they argue that the time and knowledge is not available for improvement so their focus is on maintaining what they have.

One solution for these companies would be to bring in outside help, as recommended by Chan (2004), Bourne *et al.* (2005) and Turner *et al.* (2005). In an earlier study of 2002, Bourne *et al.* found that the presence of a facilitator contributed to successful PMS adoption in their case study companies. Financially, it would be possible for companies A and B to hire external expertise but, without full support from management, this would not be wholly effective. The management would still need to commit staff members to the working team. Aside from the commitment needed, the assigned staff members would also need appropriate training. The number one obstacle established by Sousa *et al.* (2006) was lack of employee training in the concepts of performance management. This is also supported by Tung *et al.* (2011) whose findings were that PMS-related training has a significant association with effective PMS, especially in term of staff-related outcomes. Sousa *et al.* (2006) found that training was also needed at lower levels in the organization where the measures are being implemented. Thus, it seems that, despite the findings of Bititci *et al.* (2004) and Turner *et al.* (2005), the act of employing an external consultant is not sufficient in itself. The lack of knowledge and skills in relation to PMS in these companies indicates that there remains insufficient investment in their human capital to effect real improvements to the PMS that they use. De Waal and Counet (2009) found that the moral and financial commitment of top management is vital for successful PMS adoption

Nevertheless, the empirical research findings of this study indicate that, in addition to providing proper management and employee training, the recruitment of an experienced manager does aid the adoption of PMS. With long experience, such an individual will

become well-versed in management concepts and skills, and will be aware of the benefits a PMS initiative could bring the organization. The appointment of the Finance Manager in case B shows the truth of this to a certain extent. Although the company does not have an advanced PMS, they are working towards a balanced system and have successfully measured and monitored their financial metric as a result of the initiatives of this manager. The evidence from the case companies here conforms to the findings of Angell and Corbett (2009) that one of the driving forces of PMS in their case companies was the top managements' knowledge of business excellence criteria.

The empirical research findings show that proper management training, with the support of a qualified manager or external consultant could positively drive the implementation of a more mature PMS. However, the employment of external expertise will not necessarily produce positive results if it is not backed up by top management and members of the working team. In addition, at the macro-economic level, the preference of locals to work in the government sector, has directly affected the availability of qualified managers for SME. Nevertheless, a contradictory finding obtained in a recent survey of Danish companies by Pedersen and Sudzina (2012) on the adoption of PMS indicates a negative relationship between the labor market – that is the predictability of the access to qualified labor - and a comprehensive PMS adoption. However, it is possible that the result could support our findings if all the samples in their survey were SME rather than the wide range of company sizes that was actually involved.

6.3.4 Corporate Governance

Cases A and D were found to have the most mature PMS, although the degree of owner involvement and corporate governance structures differed.

The Board of Case A includes non-owner directors and managers and, although the approval of the owner is required for strategic planning decisions, his involvement is only at the final stage. This confirms the findings of Brunninge *et al.* (2007) that the inclusion of outsiders and top management in the composition of the Board encourages initiation of strategic change. The authors also pointed out that, while family-run SME are open to the idea of broadening the make-up of their Boards, they prefer to retain the ultimate authority in implementing changes of strategy.

The owner of Case D is not involved in the daily running of the business but is engaged with the strategic planning in the organization from the start. He approves the budget and tracks the progress of the company's projects. As a result of his knowledge of government regulations in the field of I.T., it could be said that the owner acts as a consultant to his own company. The distance between the owner and the Board in relation to operations reflects Garengo and Bititci's 2007 finding that a PMS will be more effective when there is separation

between owner and management. In these circumstances, the PMS increases the transparency of operations and the accountability of managers. Ong and Teh (2008) found that, in Malaysia, foreign-owned companies were more likely to have a balanced PMS than locally-owned firms. Case D is not foreign-owned but it does work closely with companies outside of Brunei, so there is a foreign influence on the operations of the company. It was also commented on that the company's PMS was inherited from its predecessor, Ericsson Technologies.

The systems of Cases B and C were less mature but, again, there were differences in their corporate governance structures and in the level of owner involvement in strategy and operations.

In Case B, the Board of Directors is involved in the strategic process but the owner's involvement occurs only at the end of the process. The person with greatest influence in determining measures is the Finance Manager, who was brought into the company on account of her experience and expertise. The focus of measurement is financial, that is, to control costs and, with the employment of this person, the company has achieved its target. The experience of Case B confirms what Gubitta and Ganecchini (2002) found in Italy. When family-run organizations admit outsiders to the management team, it is necessary for the form of corporate governance to change to allow those people to put their skills and knowledge into practice.

The least developed performance measurement was found in Case C. This is a family-owned business with one active shareholder (and one sleeping partner). There is no five-year plan in operation nor is there an annual budget exercise. The company's objectives focus more on skills-development and achieving partnerships with educational institutions both inside and outside of Brunei. Hudson *et al.* (2001b) found that, when strategy lay in the hands of the owner, it was quite informal and that is true for Case C. However, the authors also claimed that the focus of decision-making was largely financially-motivated but that is not so for Case C. The form of corporate governance operating in case C does affect the structure of their performance measurement system. The company can be categorized as a small-sized family business and, as such, does confirm the finding of De Lema and Durendez (2007) that lower importance is given to strategic planning. However, there are differences in this case study company and those investigated by De Lema and Durendez (2007) with regards to the use of a management accounting system and cash budget. The M.D. and the Operations Manager claimed that they do not practice annual budgeting and give priority to non-financial measures such as quality of customer service and level of reputation rather than to financial indicators.

In relation to corporate governance, the key findings of the case study confirm many of the findings noted in the literature. However, within the case study companies it was not shown that a certain type of governance structure or a certain degree of owner involvement necessarily led to a more developed and balanced PMS. Rather, as the literature indicates, attempts to gather valuable information for decision-making through governance mechanisms are less profitable than the use of non-financial indicators (Micheli *et al.*, 2011),

6.3.5 Organizational Culture

The empirical evidence shows that a good employee and employer relationship drives the adoption of PMS in cases A and D, which is to be expected in companies having a proper PMS. One of the contextual factors identified in the literature to drive the implementation of PMS is the existence of open relationships between the top and lower levels of management which, in turn, encourages open communication. Bititci *et al.* (2004) noted that where there is a successful PMS initiative, an achievement culture is usually in place. This is also supported by Pedersen and Sudzina (2012:15) who found that an organizational culture characterized by value, trust and participation encourages the adoption of performance measures, such as customer and sustainability measures. In cases A and D though, there is a mix of paternalistic and achievement culture. As mentioned earlier, the existence of employee appraisal creates an environment that pushes members of the organization to achieve their set targets. However, the open-door policy of the top management, with its focus on informal consultation with staff members, also encourages a paternalistic culture. Thus, in addition to the achievement culture identified by Bititci *et al.* (*ibid*), the empirical findings from these two cases show that a further driver exists in the form of the paternalistic culture. This mix of cultures can be explained by the national culture, which discourages personal criticism. It seems that the managements of A and D are aware of the need to be careful in how the continuous improvement promoted by performance measurement is applied in their organizations. The application must conform to the boundaries set by the national culture so that the members of the organization continue to support the PMS initiative. This finding supports those of Pedersen and Sudzina (2012) who noted that a weak relationship between the values, trust and participation culture had a negative impact on factors such as employee measures and innovation measures. The open-door policy of the M.D.s of cases A and D helps to reduce the negative impact of the employees' performance appraisal system on the adoption of a comprehensive PMS. Thus, their policy encourages a positive relationship between participation and trust culture and the majority of the performance measures, especially the employee measures such as the employees' performance appraisal.

Nevertheless, it is wise here to raise one issue. It is possible that a different culture existed in these companies prior to them reaching their current level of PMS. Further investigation should have been carried out during the interviews to establish whether this is so.

In contrast, the relationship between employee and employer in case B has negatively affected voluntary adoption of PMS. This is due to the authoritative management style that is practiced by the top management, especially the Assistant M.D. in her role as acting Finance Manager. The M.D. himself seems to practice a laissez-faire management style, being quite busy with his family life. His absence on a day-to-day basis allows his Assistant M.D. to exercise her authority unrestrictedly. The effect has been the creation of a power culture within the organization. Bititci *et al.* (2004) found that an authoritative management style such as that operating in case B was a positive force during the initial stages of a PMS initiative but this does not prove that a power culture necessarily influences the adoption of a PMS. This has encourages the AMD to exercise her authoritative power to her management team.

The good relationship which exists between employer and employees in case C does not seem to have influenced the company to adopt a balanced PMS. This is a family-run business and the family-oriented culture appears to affect the adoption of a PMS negatively. The regular visits made by the owner are likely to have led her to feel that systematic performance measurement is unnecessary. Several studies identified in the literature review showed how misconceptions about performance measurement can impede the adoption of a formal, effective PMS (Bourne *et al.*, 2000; Garengo *et al.*, 2005; Parsons, 2007). In case C then, it seems that despite the open communication in the firm, the organization culture is not ready to support a balanced PMS. The empirical evidence from this case study validates the findings from De Waal and Counet's study (2009) and those of Tung *et al.* (2011) that culture and lack of management commitment are the most significant barrier factors to adoption of PMS. However, another possible explanation for the absence of a formal PMS in case C is bolstered by the findings of Garengo *et al.* (2011:865). The higher performers of their case companies placed greater emphasis on managing communication internally (on the shop floor and in management teams) and externally (with policy-makers, customers and shareholders) rather than managing performance itself. They put forward the argument that these activities in themselves would aid the process of managing performance.

Teamwork is another organizational practice identified as a positive factor in the adoption of PMS (Bititci *et al.*, 2004; Bourne *et al.*, 2002; Garengo *et al.*, 2009). Smaller-sized companies cannot afford for their individual employees to have different personal agendas. In theory, it should be more manageable in an SME than in a large organization. Although this is a feature of the culture of case C, it has not pushed the company to measure performance systematically. This can be explained by the purely service-driven nature of this company. Team work is also a common practice in case D, but here the focus of team work is on the achievement of their project milestones. In addition, the team members are

from various departments, ensuring communication across the organization. The clear understanding of the organizational objectives that this breeds allows the members of the team to develop effective targets and relevant KPIs. Maintenance of relationships between team members in the case companies contributes to the performance of the team. Emphasis on relationship maintenance rather than on the status of members increases collaborative effort (Wu *et al.*, 2011). As a result, it creates ready acceptance of KPIs developed by the teams.

Therefore, the empirical evidence from the case studies indicates that when management practices an open-door policy, this personal approach towards their subordinates enables them to adopt a style of PMS that encourages continuous improvement. Cases A and D illustrate this clearly and the team work approach of the latter company also encourages a positive work culture with sharing of information among employees. The negative effect of employees' performance appraisal towards the adoption of PMS was illustrated in Pedersen and Sudzina (2012). The reluctance to change from a power to an achievement culture seen in case B can be explained by the initial results that the power culture has produced in relation to costs and profit. However, it has hindered the adoption of a balanced performance measurement system in that organization.

6.3.6 Information Technology

Commentators such Hudson *et al.* (2001), Bourne *et al.* (2002) and Bititci *et al.* (2002) have highlighted the fact that, although I.T. is needed to facilitate implementation of a PMS, SME rarely have the funds to invest in this area. In cases A and B, there has been investment in I.T. but this has not led to the implementation of an effective or advanced PMS in either company. Data used to process reports is still analyzed manually. As Franco-Santos and Bourne (2002) point out, these manual processes are not just time-consuming, they can also be de-motivating. Furthermore, as Gomes *et al.* (2011) discovered, having an organizational performance information system assists organizations to make full use of their measures. A factor that will hold companies A and B back is their lack of expertise in the field of I.T., something which will be discussed in the next section. This confirms the finding made by Gadenna and Sharma (2009) that many SME lack technical skills.

Case D has the advantage that I.T. is their core business. The company has been able to develop an automated PMS as a result of the expert knowledge available internally. They also have overseas partners that they can consult. Another possible explanation of the relative advancement of their PMS is the maturity of the company. Garengo *et al.* (2007) found that the length of establishment of a business has a positive correlation with its PMS development. During their long years of operation, case D has been able to develop the Management Information Systems (M.I.S.) required for their PMS.

Case C has had the opportunity to develop their own system as one of the counselors is an I.T. expert and is responsible for I.T. networking in the firm. However, her expertise has not been exploited. The problem appears to be that outlined in the opening sentence of this section, that is, lack of funds. An internal attempt to develop a monitoring system failed, according to the Operations Manager, and subsequent attempts to trial PMS software available online have also been ineffective. The packages do not meet the needs of the organization and are very costly. Bititci *et al.* (2002) have pointed out that the absence of affordable software for SME discourages these organizations from adopting formal PMS. Garengo *et al.* (2007) also describe a case company that initially decided not to invest in their M.I.S. in the initial development stage of implementing a PMS, instead using free software and internal expertise. Once the management was alerted to the potential of performance measurement, they decided real investment in I.T. would be worthwhile.

Attitudes towards the use of I.T. in case C are also hindering progress towards implementation of a formal PMS. Garengo and Bititci (2007) have identified certain managerial practices and employee behaviors as barriers to the effectiveness of performance measurement. The employees in company C are comfortable with their manual systems, believing them to be more practical than tracking through a computerized system.

In summary, following the typology of M.I.S. used in Garengo and Bititci (2007), cases A and B have under-capitalized M.I.S. and low overall investment in technology. However, their information practices and human behavior in respect of M.I.S. is advanced. Case C has ineffective M.I.S. and low I.T. investment and their information practices are inadequate. Case D has advanced M.I.S., high investment in I.T. and positive information practices and employee behaviors. Consequently, the empirical evidence here underlines the findings in the literature review on the importance of I.T. as an influencing factor in PMS development. The cases investigated support the assertion of Garengo and Bititci (2007) that there is a relationship between the degree of M.I.S. and the level of PMS. What Garengo and Bititci found to be true in manufacturing SME has also proved true in these service sector SME.

6.3.7 Business Process

Almost all of the managers in the case study companies are aware that clear workflows would assist them to identify the strategic business processes necessary for successful implementation of a PMS. This is particularly so at the operational level. Identification of business processes is important because, as Garengo *et al.* (2011:869) point out, 'what flows between processes is information'. Currently, the companies do not document all work processes and procedure is often based on individual experience. This finding confirms Garengo and Bititci's (2007) assertion that SME often lack formalized management of processes and this hinders the identification of relevant measures and the development of

appropriate KPIs. Done *et al.* (2011) also found KPIs lacking in almost all of their SME case companies.

Camp (1995) in Quesado and Gazo (2007) listed a number of business processes that organizations could use to compare themselves with their competitors. It is possible to categorize two strands; supporting business processes including financial transactions and human resource management, and operational business processes such as market management, supplier management, product/service operations and product/service maintenance (see Quesado and Gazo for the full list). The empirical evidence of this research indicates that most of the business process documentation relates to the supporting processes, especially in cases A and B. Thus, the lack of multi-dimensional measures from other business processes, such as the operational business process, affects the adoption of PMS negatively in these case companies. Tung *et al.* (2011) note how the existence of multi-dimensional performance measures encourage an effective PMS. The existence of formal documentation of both operational and business support processes enables the identification of KPI and thus encourages the adoption of managerial processes such as PMS (Garengo *et al.*, 2011).

The requirements of both government audit and the parent company can explain why there is documentation of financial transactions. The non-existence of well-documented work processes for non-financial measures is in line with the findings of this investigation on the dimensions of measurement in these companies. Non-financial measures that are actually used at the operational level have not been made official. Krause (2003) and Philips and Louvieris (2005) advise that a knowledge base to document organizational work processes encourages adoption of PMS. In cases A and B, the knowledge base is fragmented.

Although management teams talked about a number of measures that they use as performance indicators during the interviews, there is little prioritization of these. Amaratunga *et al.* (2001) pointed out that it is imperative for the management of an organization to select and prioritize their most significant measures. Quesado and Gazo (2007) suggested that critical success factors should be identified based on the priority business processes. Their case study highlighted the importance of a defined mission and vision prior to the application of the processes in the identification of C.S.F. In our case studies A and B, such a system is lacking as a result of the non-documentation of all relevant work processes.

Case C uses only basic accounting procedures in monitoring their financial activities and is lacking proper work processes for both its financial and operational procedures. In contrast, in case D there are properly documented work processes and procedures for both financial and non-financial measures. The findings chapter indicated that workflow and standard

operation procedures (SOPs) are practiced by members of the organization in their effort to achieve the set targets at operational and corporate level. This has enabled them to align their PMS with the work activities at the operational level. Findings from several researchers (Kaplan and Norton, 1996; Lawrie and Cobbold, 2004; Dahlgaard Park, 2009; Muras *et al.*, 2009) confirm this research finding that success in implementing PMS will be greater if it is linked to the work process activities.

The case studies illustrate that the simple existence of work processes does not necessarily affect the adoption of PMS positively. However, the existence of work processes that have been identified strategically and are linked to the PMS will ensure that proper and relevant measures are taken into account. Consequently, this will encourage acceptance of the system by those members it affects. Furthermore, the work processes need to be made official and recognized at the corporate level with full supporting documentation in order that reliability and relevance can be monitored.

6.3.7 External Stakeholders

The empirical findings of this research identify local and foreign government rules and regulations, supply chain and markets trends as other factors which positively influence the adoption of PMS in the case companies. With the exception of the study by Garengo and Bititici (2007), in which practitioners and scholars were interviewed, none of these particular sub-factors of external stakeholders have been investigated and empirically tested in the research identified in the literature review. The research conducted by Fleming (2009) and Amizwati *et al.* (2010) did look at other sub-factors though, namely strategy and market competition.

The findings from Garengo and Bititci (2007) indicate that factors relating to the external environment such as supply chain, government, banking and changes in the industry were some of the factors that enabled PMS in SME. However, these factors were not investigated independently by the researchers, but rather they were considered and investigated as part of organizational strategy.

However, our research indicates that this factor of the external environment needs to be categorized independently because the sub-factors that were identified specifically relate to external organizations or individual people rather than to the internal strategic policy. Consequently, in this research, the factors of external stakeholders and organization strategy have been coded and investigated independently.

In cases A and B, the companies are accountable to the local government and must submit an annual report. For case D, their major client is the government and they must meet the deadlines laid down by the client. For the three companies, the need to be accountable to

this external body is certainly a force that has pushed them towards formal PMS. Overall, the literature suggests that opinions from both internal and external stakeholders are required in designing a PMS in order to ensure its full accountability (Basu *et al.*, 2009; Marwa and Zairi, 2009). What remains unclear in this study is to what extent the requirements of the government have influenced the design of PMS in each company.

The findings indicate that external stakeholders such as the local and foreign government, suppliers, customers and market forces have positively affected the adoption of PMS in the case companies. This finding seems to confirm those of Pedersen and Sudzina (2012) that perceived environmental uncertainty encouraged their sample companies to adopt a comprehensive PMS. However, their findings on environmental uncertainty are valid only in relation to market trends and competition. They also indicate the likelihood of PMS adoption, especially in terms of innovation measures, when there is a predictable access to supplies. Their research did not investigate further the effects of local and foreign government intervention, however. In summary, their findings indicate mixed results in respect of the effect of various environmental uncertainties on the adoption of performance measures.

Our findings also illustrate the influence of suppliers and customers in the adoption of PMS. In the example of case D, the delivery of software applications is likely to be influenced by their external programmers based in India or Singapore. A monitoring system has been developed to ensure that the delivery time is met. Tower and Burnes (2008), in their conceptual paper on manufacturing SME, mentioned that any problem in material scheduling would affect both the commitment to the customer and the organization's ability to meet their own strategy. A system that monitors both ends of the chain is a prerequisite for our case company because, if any link of the supply chain does not meet its deadlines, this will affect the rest of the supply chain.

Effectively, our research finding lacks strong confirmation from previous research. Garengo and Bititci's (2007) findings could also be referred to but their research failed to explore the effects of the external environment in any great depth. The most that can be claimed is that this research confirms their initial propositions on the effects of government, supply chains and market trends on the adoption of PMS.

6.3.9 Summary of Discussion on Influencing Factors of PMS Adoption in the Service Sector SME

The conceptual framework presented in Chapter 2 (Figure 12) offered no illustration of the relative importance of the six identified influencing factors. The empirical evidence from this research has clarified this within the sector and setting under study and has revealed two

additional factors. For these reasons, it is necessary to re-configure the original diagram (see Figure 43 below). The six best practices were found, at least to some extent, in all four case companies so remain a constant in the diagram. The re-configuration illustrates the weighting of the factors in regard to their significance and also shows how the influence relationships between factors.

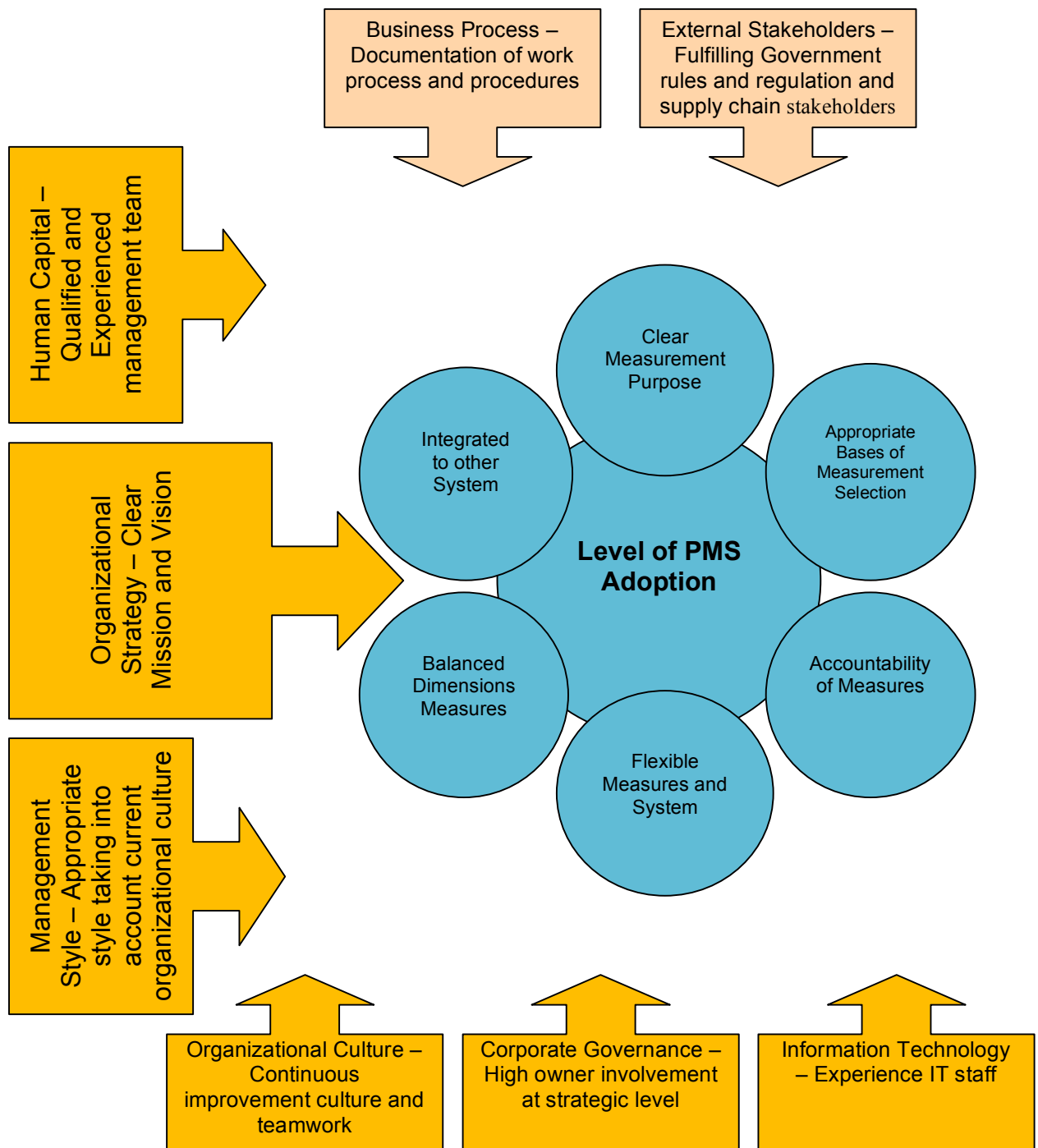


Figure 43. Conceptual Framework of PMS Adoption for Service Sector SME

Key Core Factors

1. Organizational strategy:

The key factors needed to drive adoption of a PMS are a transparent company mission and vision and good practices in strategic planning. This includes the existence of five-year business plans and annual budgets. Where the organization's mission and vision is not clear, and is open to misunderstanding at lower levels, awareness of the effects of operational activities on the overall performance of the company is lost. Thus, organizational strategy seems to be the core factor. It acts as the main driver of PMS adoption but can also be a barrier. Lack of understanding of the mission and vision of the case companies among their lower level management affects or is affected by six other barriers. Meanwhile, a clear mission and vision, good practice of five-year planning and monitoring customers are the sub-factors of organizational strategy which influence or are influenced by the other driving forces of PMS adoption.

2. Management Style:

Although a management style of open communication and respect towards subordinates encourages a culture of empowerment in which employees are permitted to give their opinions and use their initiative within the boundaries of their responsibilities, an authoritative style can also force the adoption of PMS in the short-term. If the Managing Director can demonstrate long-term thinking and an attitude that shows a clear sense of the future direction of the company, it indicates they are committed in their intentions in adopting PMS. If such thinking is lacking, then the long-term success of the PMS is jeopardized. Therefore, the findings of this study do not support the arguments of various authors that top-down improvement programs fail to encourage sustainable change in the organization. As indicated in case B, the top-down improvements program initiated by the A.M.D. exemplifies a power style of management but it is this that has forced the adoption of PMS in her organization.

3. Human Capital:

Relevant management training, whether formal or informal, influences the likelihood of success of performance measurement. Managers need to understand the concept of PMS as a whole and the benefits accruing from it. Training affords them some familiarity with the terms and jargon used in this management system. The training needs to be focused on the BSC or other pertinent systems. The presence in a company of qualified members of staff with vast management experience also encourages the adoption of PMS. However, the lack of experience in human resource management in Brunei affects the availability of the requisite management expertise.

Corporate Governance:

High involvement of the owner at the strategic level was thought to positively affect the adoption of PMS in the case companies but these findings show mixed results and thus are not entirely consistent with the claims made in previous research. Lower involvement of the owner at the operational level encourages the adoption of PMS because, with the existence of a proper PMS, the owner does not need to become involved in the daily operations of the company. However, interference by the owner at the operational level delays daily activities.

Information Technology:

Proper management of data helps an organization to make effective decisions. The existence of a Management Information System (MIS), supported by the use of adequate information technology, allows for information sharing by members of staff and facilitates clear channels of communication. If the available system can provide reliable, up-to-date information, the company is better able to measure and then manage its performance. Sophisticated information technology systems allow a company to integrate its PMS with other management systems. However, the capital constraints faced by many SME lead to insufficient investment in the technology required to support such integration. In addition, the continuing use of manual databases means that some firms lack the instant information-sharing capability needed to execute the PMS.

Organizational culture:

The practice of a personal approach towards subordinates creates a harmonious employer/employee relationship, which facilitates two-way communication. Management is able to communicate the organization's mission and vision and also gather valuable information from their employees. The management is aware of employee feedback and can take this into account in their decision-making. The information obtained from employees will have an indirect influence on the company's strategic and operational policies. In addition, a focus on teamwork and team achievement rather than individual success fosters a conducive working environment. The need to achieve both individual and team targets encourages employees to share information.

Two newly identified factors

Two other factors that either drive or hinder the adoption of PMS were identified during the interviews. The first factor, external stakeholders, was not mentioned as a barrier to performance measurement by any of the interviewees. The second factor, work process, was seen to act as both driver and barrier. In effect, there were eight drivers of and seven barriers to PMS adoption identified during the interview.

Business Process:

The existence of work systems encourages the identification of KPI within the work process. It is also essential that the latter is constantly reviewed and amended in accordance with current trends and feedback from employees. Managing internal processes contributes to the adoption of a proper PMS and, an emphasis on business process rather than on organization structure in the design of the PMS brings more benefits in terms of identifying reliable KPI. However, without documentation, the identification of key work processes and the ensuing KPI is unachievable.

External Stakeholders:

Both local and external regulations influence the way companies in the case study monitor the performance of their service. The requirement to submit an annual report to the local authorities, for example, pushes companies to develop a proper performance measurement system to ensure that they do not infringe the legislation. Other firms need to meet deadlines and provide documentation required by foreign governments.

The supply chains of some firms involve targets enforced by suppliers, distributors and clients and the achievement of these also prompts the development of monitoring systems. Such systems are also needed to follow changes in the market. High levels of competition and volatile markets have forced all of the case companies to create systems to properly monitor their markets.

6.4 Conclusion

This chapter has discussed the research results regarding the adoption level of PMS and their practices in Brunei as well as driving and barriers forces of PMS adoption in the case companies. Based on the proposed theoretical framework and the research findings, the major influencing factors of PMS adoption are grouped into eight groups including; corporate governance, information technology, organizational culture, organizational strategy, management style, human capital, external stakeholders and business process. Although a number of recognized driving forces identified in the literature were also identified in the research context, the findings of this study revealed that, despite the existence of a variety of driving and barrier forces, there are some common incentives for adopting PMS. One of the most significant findings to emerge from this study was that the presence of a five-year business plan is at the core of the driving forces. Meanwhile, a lack of understanding of the mission and vision of the organization lies at the core of the barrier forces to PMS adoptions. The choice of management style also plays an important role for PMS to be successfully adopted. Management needs to firstly identify and understand the existing organizational culture before exercising any type of management style. In addition to this, human capital, in the form of a qualified and experience management team, can assist PMS adoption. This

research demonstrates clearly that lack of qualified and experienced managers has hindered some case companies in their attempt to design and develop an appropriate PMS.

Chapter 7:

Recommendations and Conclusions

7.1 Introduction

The research was developed to investigate the practice of performance measurement systems (PMS) and the level of its adoption amongst service sector SME in Brunei Darussalam. The study also examined the organizational and other factors which have aided adoption and those which have hindered companies in their efforts to implement a PMS. The limited amount of general theoretical literature on performance measurement in SME specifically and in the context of service providers rather than manufacturers prompted this research. In reviewing the literature, it was also apparent that there was little or no empirical evidence obtained from the developing world. This research therefore sought to answers to two questions.

RQ1. What is the current level of PMS adoption by the service sector SME in Brunei Darussalam?

RQ2. How do organizational factors influence the adoption of PMS in service sector SME in Brunei Darussalam?

In this chapter, the empirical finding from the study will be synthesized with respect to the individual research questions and both the theoretical and practical or policy implications will be outlined. The limitations of this study will be described and, based on these, recommendations for the direction of future research will be made.

Figure 44 illustrates the summary and conclusion of this thesis.

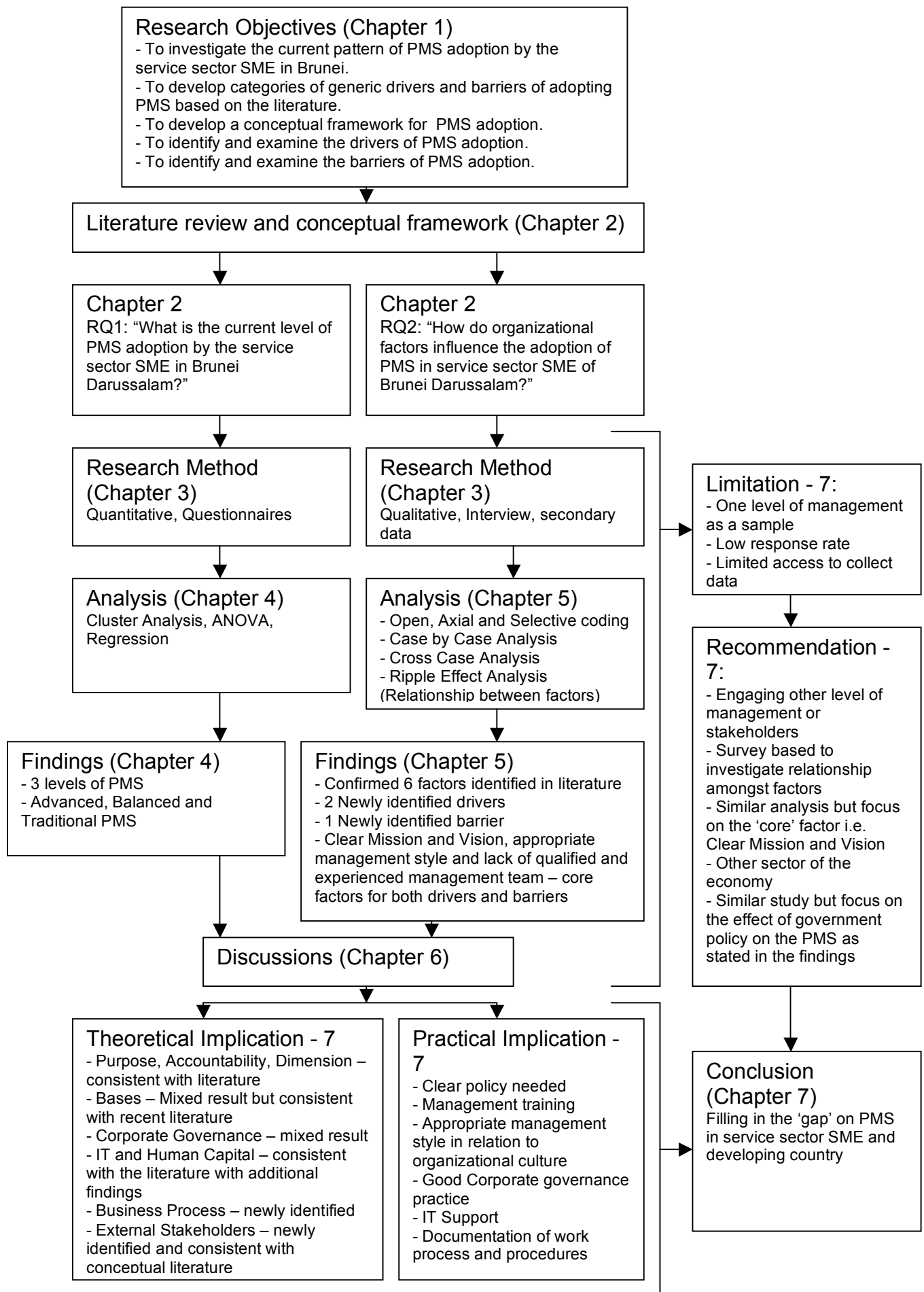


Figure 44. Thesis Process and Conclusion

7.2 Review of the Research Objectives

Despite the development of various performance measurement frameworks which have moved away from financially-focused systems towards more balanced performance measurement, there are still many challenges that hinder the successful adoption of such systems. From the review of the literature, it was evident that further investigation into the driver and barrier forces of performance measurement systems (PMS) was warranted. The gaps in the literature centered on PMS in small and medium-sized enterprises, particularly in the service sector, and also on the experience in developing countries. These gaps are the factors that prompted this study.

As outlined in the introductory chapter, this research has focused on the level and patterns of PMS adoption in Brunei and has examined the factors – driver and barrier – that account for this level of adoption. From the findings, it is possible to make recommendations for practitioners in the region and for future researchers

The available literature, which focused mainly on larger organizations and the manufacturing sector, nevertheless allowed the conceptualization of six ‘best practice’ factors as benchmarks for assessing the development of PMS in Brunei firms. In developing this framework, the inherent characteristics of SME and the service sector, were taken into account. Six factors emerged from previous studies as factors that acted as both drivers and barriers and the research tested whether these were indeed applicable in the new context.

7.3 Summary of Chapters

7.3.1 Literature Review

As described above, the review of the literature revealed that there were few empirical studies on the drivers and barriers factors of PMS adoption in service sector SME. Secondly, the empirical evidence on the drivers and barriers had been collected from companies operating in developed countries.

A number of frequently-cited performance measurement frameworks were analyzed. In addition to peer review, the researcher included his own evaluation of the strengths and weaknesses of each. It was also necessary to investigate the characteristics of both SME and service sector industries. This investigation showed a number of ‘best practices’ of PMS adoption, which were then categorized into six themes. Empirical evidence on the success and failure of PMS adoption in SME was also examined to allow the delineation of the most frequent driver and barrier forces.

From the six main categories of 'best practices' of PMS adoption and six main categories of 'drivers' and 'barriers', a conceptual framework was developed and used to investigate the phenomena of the study in order to answer the two research questions.

7.3.2 Research Methods

As explained in Chapter 3, this research used a mixed method of data collection, employing both qualitative and quantitative methods. An interpretivist ontological and epistemological stance was adopted as the approach to the research in order to understand the phenomena through the meanings that the interviewees attempted to communicate. A case study on service sector SME in Brunei was used.

In order to answer the first research question, a questionnaire was developed and distributed. Quantitative analysis was used because this method is known for the elucidation of regularities (Cassell and Symon, 1994). The questionnaire was distributed to those fulfilling the description of service sector SME. The questionnaires were distributed to 357 SME in Brunei from the list provided by the 'Brunei Labor Department'. Only 62 responses were received, however.

A qualitative research study was adopted as the main strategy for answering the second research question for the many qualities that such a strategy offers. As Cassell and Symon (1994) explain, such an approach is flexible, holistic and reflexive and allows the emergence of themes or symmetry of outcomes. A case study, involving semi-structured interviews with 29 managers from four distinct service sector SME was employed to achieve this objective. This method enabled the researcher to gain insight from the interviewees. In order to gather other information, documentary data was used. The combination of the two methods enabled the researcher to answer the research questions.

7.3.3 Data Analysis

After the data collection process, statistical software (SPSS v16) was used to analyze data from the questionnaire. Both descriptive and statistical analyses were conducted. The data was screened and treatment of missing values and normal distribution was conducted. Factor analysis of all variables was also conducted to test for construct validity. Cluster analysis was utilized to cluster the respondents into three levels of PMS adoption; traditional, balanced and advanced PMS. Based on the cluster analysis, there were 10, 36 and 16 respondents considered as being at the traditional, balanced and advanced levels of PMS respectively.

Meanwhile, the data collected from the interviews was exported to a software package NVivo (V.8) for organization and analysis. The data was then coded through various steps i.e. open coding, axial coding and selective coding and this eventually produced a number of

themes of drivers and barriers of PMS adoption. Finally, core categories were located, representing the central phenomena of the study and showing how categories relate to one another (Corbin and Strauss, 1990).

7.4 Review of the Empirical Findings

The main empirical findings are chapter specific and were summarized within the respective empirical chapters: quantitative findings (the level of PMS adoption) in Chapter 4 and qualitative findings (the effect of organizational factors on performance measurement system adoption) in Chapter 5. This section will synthesize the empirical findings to answer the two research questions of the study.

7.4.1 What is the current level of PMS adoption by the service sector SME in Brunei Darussalam?

Based on the research findings, Brunei service sector SME have adopted balanced PMS, with more of the sample at the advanced level than at the traditional level. Those still adopting a traditional type of PMS have been in operation for more than 16 years, with some operating for more than 20 years. In contrast, those at the middle and advanced levels of PMS have mostly been in operation for fewer than 10 years. Another striking characteristic of those at the traditional level was that more than 40 percent of the owners or managers have an accounting background but those at the balanced and advanced levels have either administrative or technical backgrounds. No differences in the type of ownership among the three clusters were noted. The characteristics of performance measurement systems in the service sector SME are explained below.

Purpose of measurement: The purpose of measuring performance depends on the layer of the management. At the corporate level, this is influenced by the need to report to the shareholders and is motivated by cost control requirements whereas at the lower or operational level, it is motivated by the need for continuous improvement, especially through the annual employee performance appraisal.

Bases of measurement selection: Almost all of interviewees from the case companies highlighted the lack of alignment of strategy at the corporate and operational levels and claimed that this was due to the lack of communication between the two levels of management. Nevertheless, it was found that the bases of measuring performance at the operational level were aligned with the overall objective of the organization through the development of 'unofficial' measures.

Accountability of PMS: No proper working teams were created to oversee the performance measurement system of the whole company in the case companies, with the exception of one firm which used 'teamwork' as its business model. In the other organizations, the majority of measures are the responsibility of individual managers.

Flexibility of PMS: In half of the case companies, their system is inflexible due to the need to report any activities or changes to the Board of Directors. Nevertheless, at the operational level, the managers are able to take account of changes in the environment in their performance measurement system. However, this has created measurement gaps between the upper and lower levels of management.

Dimensions of measures being used: At the corporate level, it seems that all case companies place greater emphasis on financial metrics but evidence from the operational levels indicate a difference. The need to achieve the financial objectives at the corporate level is translated into various 'unofficial' non-financial metrics at the operational level.

Integration of PMS: The lack of information technology support has negatively affected the integration of the performance measurement system into other management systems in the case companies, with the exception of an IT-based company. Nevertheless, the measurement system is linked with the reward system through the employee performance appraisal scheme. This is still done manually, however.

7.4.2 How do organizational factors influence the adoption of PMS in service sector SME in Brunei Darussalam?

The findings for this research question have been categorized as drivers and barriers throughout the research. Within the driver category, eight factors emerged while seven barriers were identified.

Drivers

Organizational strategy: The research findings indicate that there are three sub-categories of organizational strategic practices that contribute to the adoption of PMS. The first is that the practice of operating Business Intelligence, such as being proactive towards customers' needs and the maintenance of the company's reputation, prompts proper adoption of a performance measurement system.

The second sub-category is related to the case companies' practice of clear policy direction, such as having a five-year business plan and an annual budget. These were recognized as some of the good practices that encourage the management to have a proper system in order to monitor their actual performance in relation to the targets set.

The other sub-category relates to a positive orientation towards customer retention. The case companies have developed monitoring systems to help them achieve this.

The interviewees in this study identified these strategic practices as some of the main reasons prompting their organization to adopt a proper PMS. This finding is significant as the factors mentioned were not noted as drivers of PMS in previous literature. This research also indicated that these practices influence other driving factors, with the existence of a clear policy being especially significant.

Management style: The research findings confirm the evidence from the literature review that management style is an important factor in influencing the adoption of PMS. This factor has four sub-categories; open communication and respect towards subordinates; authoritative management style; a sense of direction and frequent meetings.

Open communication and respect towards subordinates facilitate a culture of empowerment among the employees, which encourages buy-in to the management policy by the subordinates. Nevertheless, the interview findings indicated that, in one case, an authoritative management style had forced acceptance of the PMS. However, as the managers pointed out, such a style will only achieve short-term success and they realize that their management style will need to evolve to ensure long-lasting acceptance of the company PMS. A high frequency of meetings was also found to influence the likelihood of adopting and practicing PMS.

Corporate governance: Findings from both the literature and the research evidence indicate the influence of corporate governance structure on successful adoption of PMS. From the interviews, two major sub-categories of drivers were identified: high involvement of the owner at the strategic level and lower involvement of the owner at the operational level.

Owners who are actively involved in the development of their strategic planning tend to be more committed to the adoption of PMS although this was not true of all owners active in strategy. For some, the act of performance measurement was simply an annual phenomenon. The finding on this aspect of owner involvement is therefore inconclusive.

In addition, this research revealed that owners who limit their involvement to daily operations tend to have a proper monitoring system in place. Such owners need to be more committed to adopting a proper PMS to ensure greater transparency and accountability on the part of their management team.

Information Technology: The research results confirmed the evidence from the literature on the importance of information technology in assisting the proper adoption of PMS. From the

interview findings, it is evident that the existence of a Management Information System allows clear information sharing amongst subordinates. In addition, proper management of data combined with the use of information technology facilitates communication among different sections of the company. This allows management to properly monitor their operations. However, proper management and sharing of data is only feasible when the companies have proper backing through their information technology systems.

Organizational culture: Organizational culture is credited in the literature as one of the major elements that influence the success of PMS adoption. These research findings also identified many elements that have driven members of the case companies towards the adoption of PMS. Good employer/employee relationships, achieved through the practice of a personal approach towards subordinates, have contributed to positive outcomes in terms of communicating the company mission and vision. A culture that promotes continuous improvement by encouraging the management to take into account their employees' feedback in their decision-making has created good responses from the subordinates in accepting the company's PMS. The literature and the findings of this study also indicate that teamwork and an emphasis on team achievement rather than individual achievement drives the adoption of PMS by the employees.

Human capital: The literature indicates that human capital, developed through management training, management qualifications and experience, and external assistance, drive the adoption of PMS. However, the findings of this study indicate that the likelihood of successful adoption of PMS in the case companies is only partly due to the training given to the management. Although the literature noted the usefulness of outside help in the efforts of SME to adopt a PMS, this research found little evidence that access to external assistance was an influence in how the companies developed their systems. It was found that the presence of a manager with good qualifications and extensive experience encouraged adoption. Additionally, a clear job description and tasks for employees enabled them to focus on their targets and this too encouraged buy-in to the system.

Business process: A further unique driving factor found in this research is the existence of business process. The literature indicates only that business process is one of the perspectives to be included in performance measurement. However, it does not indicate that business process itself could encourage the adoption of PMS. The research findings indicate three sub-categories of business process - work systems, work policy and procedures and updated work processes – the existence of which encourages the adoption of PMS. If the management is able to identify key strategic work processes, it facilitates the identification of much-needed key performance indicator (KPI) for the PMS. Furthermore, the research findings also indicate the necessity for the work processes, policy and procedures to be constantly reviewed so that only relevant KPI are used.

External stakeholders: The literature on PMS described how a usable framework needs to include the views of external stakeholders in the perspectives it utilizes but it did not mention that external stakeholders may drive the adoption of PMS. The research findings indicate the influence of a number of external stakeholders in the case companies' decisions to adopt PMS. The influential external stakeholders identified here are local government rules and regulations, foreign government rules and regulations, the supply chain and market trends.

The requirement to submit various reports within deadlines set by local government and foreign governments encourages the companies to have a proper system for meeting the deadlines. Furthermore, in order to meet the targets enforced by or on customers, suppliers and distributors, the management needs to have a proper operational monitoring system. In addition, the interviewees indicated that they need to have a proper monitoring system in order to monitor market trends.

Barriers

Organizational strategy: A lack of understanding of the mission and vision of the organization on the part of lower level management has a negative effect the adoption of PMS. This sub-category was indicated in the research findings as the core blocking factor of PMS adoption. It also contributes to the negative effects of the other blocking factors and sub-factors.

Management style: There is agreement in the literature and these research findings that a negative management style negatively affects the adoption of PMS. From the interviews, the major cause identified was that targets are given without prior consultation with the relevant members of the organization.

Human capital: It emerged from the study that the lack of experience in human resources in the country affects the availability of the requisite management expertise. This issue cannot be tackled in the short term due to its macro-level nature. However, some of the interviewees indicated that this could be overcome by employing external expertise to advise them in developing a proper PMS, although in practice this has not happened to any significant extent.

Corporate governance: Both the literature and the findings of this investigation indicate that a lack of commitment by the management to the adoption of PMS is one of the factors that hinders its adoption. From the interviews, it emerged that involvement of the owner in the daily operations of the organization reduces the apparent need for a proper PMS.

Information technology: The research evidence revealed that there are two sub-categories of technological concern which create barriers to performance measurement. The first

relates to weaknesses in the I.T. infrastructure which, for example, limit information sharing. In the case companies specifically, these were the existence of manual data collection systems and limited technological capacity to handle a vast amount of data.

The second sub-category is problems arising from lack of investment in I.T. One of the characteristics of SME is the difficulty they have in accessing capital and resources. The interview findings indicate that lack of funds to invest in the high technology required to support PMS negatively affects proper performance in three of the case study companies particularly. These findings conform to those of previous studies.

Organizational culture: The research found that negative work practices, such as failure to share information, withholding of information, reluctance to accept criticism on the part of members of the organization were all claimed to create a non-conducive work culture. These were the main sub-categories of organizational culture that the interviewees perceived as hindering the adoption of PMS.

Business Process: The literature did not indicate business process as one of the factors that could hinder the adoption of PMS. However, the research findings indicate that, without documentation, the identification of key work processes and the ensuing KPIs is unachievable. This will hinder the adoption of a proper PMS.

Summary

A number of recognized driving forces identified in the literature were also identified in the research context. A key finding to emerge from the study though is the existence of some common incentives for adopting PMS, the most significant of which is that the presence of a five-year business plan is at the core of the driving forces. Conversely, a lack of understanding of the mission and vision of the organization lies at the core of the barrier forces to PMS adoption. Meanwhile, exercising an appropriate management style by taking into consideration the current organizational culture will assist better acceptance of PMS. Lack of experienced and qualified management team also considered as one of the main factors that could contribute to non-adoption or failure of PMS adoption.

7.5 Implications for Theory and Practice

7.5.1 Theoretical Implication

The theoretical implications of this study are categorized into three main areas – the conceptualization of ‘best practices’ of performance measurement system: the ‘influencing factors’ of performance measurement system adoption and the specific context of this research.

Best Practices

While investigating the level of adoption of PMS in service sector SME, our study has explored other 'best practices', taking into account common features such as dimensions of performance measures, bases of measures selected, purpose of measurement, accountability of measures and flexibility and integration of measures. This research used comprehensive 'best practices' criteria in determining the adoption level of PMS compared with previous studies. Past literature on the criteria used to investigate the adoption level of PMS also employed a long list of performance measures available (Amizawati *et al.*, 2010; Pedersen and Sudzina, 2012). This forms a minor part of the 'best practices' criteria used in our research, for example, in the dimensions of performance measures. The explicit theoretical contribution of this research, based on these six 'best practices' of PMS, is explained in the section which follows.

Purpose: One of the main purposes for having a performance measurement system is to identify and improve defects in strategy (De Waal, 2007; Lima *et al.*, 2009). This is consistent with our finding that one purpose is to oversee strategy, even though the mechanisms to do this are lacking in some of the case companies. It is, however, notable from this study that those purely service-oriented case companies use their performance measurement system to improve quality and business process. These findings are consistent with those of Philips and Louvieris (2005), Anand *et al.* (2009) and Karassavidou *et al.* (2009).

Bases: Fitzgerald *et al.* (1991) proposed that the selection of performance measures in service-based organization depends on the type of their service. It has been noted in this study, however, that strategy rather than service process type is a key basis for the selection of performance measures. The alignment of strategy at operational and corporate level is made possible by the existence of 'unofficial' or 'informal' performance measures. Consequently, strategy plays an important role as a reference for managers to select the appropriate measures, whether these are made official or not. This finding is consistent with that presented by Amizawati *et al.* (2010) but contradicts that of Auzair and Lanfield-Smith (2005). In this aspect, the current study extends the claim of Amizawati *et al.* (2010), that service process type does not influence the performance measurement selection as Fitzgerald *et al.* (1991) had thought.

Flexibility and Accountability: The development and assignment of performance measures arise from accountability to relevant internal and external parties and the responsibility for their development is in the hands of an appointed team (Basu *et al.*, 2009; Marwa and Zairi, 2009; Parson, 2007; Roman Schneider and Vieira, 2010). However, our findings indicate that the responsibility for the measures rests mostly on individuals. The assumption in the literature is that, while larger companies operate in the context of a rigid structure, SME are

viewed as flexible and team-oriented and easily able to respond to changes in the environment, but the research findings here contradict that notion, certainly in regard to team working on PMS.

Dimensions: Hudson *et al.* (2001b) previously indicated that SME are characterised as having imbalances in their selection of performance measures. The findings from this study contradict that indication as the case companies here demonstrated that the practice of developing 'unofficial non-financial' measures to complement the 'official financial measures' developed at the corporate level is common. This finding only emerged and was made possible through the in-depth interviews conducted during this study with the management teams of the case companies. 'Unofficial' performance measures were acknowledged by members of the organization even though they were not officially documented and recognised at the corporate level. The existence of these 'unofficial' measures was in fact vital for successful attainment of the corporate objective.

Influencing Factors

In terms of the influencing factors of PMS adoption, this research contributes to various organizational contextual literatures. The factors influencing adoption of a PMS were conceptualized and grouped after the initial research into the current literature. Their relevance to the determination of PMS attributes was then tested in practice to assess their relative importance in service sector SME, and modifications to these were made, resulting in the development of a conceptual model of PMS adoption in service SME. The various relationships between the factors were indicated in Figure 43 in section 6.3.9. The outcome showed that the six identified factors, together with two additional factors – business process and external stakeholders – did support the successful adoption of PMS. This finding contributes to theory as these factors had been conceptually identified in earlier literature (Garengo and Bititci, 2007; Krause, 2003; Philips and Louvieris, 2005) but no empirical evidence had been collected.

The previous literature relevant to this area (Garengo *et al.*, 2005; Garengo and Bititci, 2007) did not investigate the various organization factors concurrently but rather investigated them separately. It also failed to investigate the relationships among the various factors identified by the previous researchers. This study has taken a further step by explicitly investigating the relationships between the various organizational factors and sub-factors. This permitted identification of the core factors and most influential sub-categories for the effective adoption of PMS. The research findings indicate that the existence of a clear mission and vision within the organizational strategy factor influences the other sub-categories of organizational factors. Management style and human capital also consider relatively important in either drive or hinder the adoption of PMS. This research has revealed explicit factors that have the greatest impact on other factors.

Human Capital: The positive effect of PMS-related training on successful adoption has been shown in much of the literature (Sousa *et al.*, 2006; Turner *et al.*, 2005) yet one of the findings of this research is that work experience plays just as important role. An experienced and well-qualified manager is likely to be well-versed in management concepts and practices and can initiate adoption of PMS. This finding contributes to the literature in relation to the influence of human capital, demonstrating the importance of management experience.

Organizational Culture: Evidence obtained in this study shows that good understanding between employer and employee does not necessarily promote adoption of a formal PMS. Rather this will depend on the objectives of the members of the organization in influencing its direction. As Wu *et al.* (2011) note, the success of any team will depend on whether the objectives of the members can be categorized as 'relationship maintenance' or 'status maintenance'. As illustrated in our case studies, the success of teamwork is a result of the need to maintain the relationships amongst the members. Thus, it is important for researchers to acknowledge the importance of each team member's individual objectives in influencing the successful adoption of PMS.

Corporate Governance: The existence of a non-owner manager tends to coincide with a more advanced performance measurement system (Garengo & Bititci, 2007; Gubitta & Gianecchini, 2002). It is however noted from this study that a certain type of governance structure or a certain degree of owner involvement does not necessarily affect the adoption of a performance measurement system. The case studies indicate that even an owner-managed company may have a more advanced system than those with non-owner managers. This finding suggests that the corporate governance typology of PMS adoption developed by Garengo & Bititci, (2007) might not be applicable in the case of service SME.

Information Technology: The adoption of any performance measurement system is influenced by the existence of management information systems (Garengo and Bititci, 2007). The results of this study are sufficiently similar to those of the findings of Garengo and Bititici to prove that there is no difference between manufacturing and service sector SME in terms of the influence of I.T. on the adoption of PMS. However, the lack of relevant I.T. expertise has hampered the adoption of PMS.

Business Process: A number of previous researchers found that clearly linked work process positively affects the success of PMS implementation (Kaplan and Norton, 1996; Lawrie and Cobbold, 2004; Dahlgard Park, 2009; Muras *et al.*, 2009). The findings here indicate that strategic identification of work process and corresponding linkage to PMS is necessary for the selection of proper and relevant measures. It is this rather than clearly linked work process that drives successful implementation.

External Stakeholders: Previous studies, including those of Basu *et al.* (2009), Marwa and Zairi, (2009) and Roman Schneider and Vieira (2010) asserted that the opinions of both internal and external stakeholders are required in designing a PMS. The requirements of local and foreign government were identified conceptually as factors that could affect the adoption of PMS (Pedersen and Sudzina, 2012). Our empirical findings support the conceptual proposition made by those authors as it was evident that both local and foreign government rules did contribute to the adoption of PMS by our case companies.

Context

A further contribution of this study is the provision of a new contextual perspective on the issue of PMS development and practice through the examination of practices in Brunei. Given that existing theory has its cultural boundaries (Amizawati *et al.*, 2010), this study extends knowledge within the setting of a developing country.

7.5.2 Practical Implications

The findings of this research can benefit practitioners in charge of PMS in their organizations as they will be able to use these findings to establish first-hand understanding of the current level of PMS in the Brunei setting before making any attempt to develop their own systems. It will also provide them with first-hand information on the key barriers and drivers to PMS in service sector SME in Brunei. This research will increase awareness of the issues that they need to consider in order to adopt and develop PMS more effectively in their organizations.

The conclusion of this research revealed that the core of all challenges of PMS adoption in the context of service sector SME in Brunei relates to the lack of understanding of the company mission and vision by the lower level management of an organization. Hudson *et al.* (2001b) and De Lema & Durendez (2007) identified poor strategic planning as a barrier and the evidence from this thesis supports their assertion. The findings show that strategic planning has not been properly practiced by SME in Brunei. Consequently, the main practical effort should be focused on the strategic planning process, which is a core barrier, to ensure that it will not impact further on the other barriers to PMS adoption. The SME owner or manager will need to implement strategic planning at the corporate level and communicate this to those at the operational level. This will demand a holistic effort starting with the owner and cascading to the managers as well as the employees (Saunders *et al.*, 2008).

Based on the research findings and the special features of SME in Brunei outlined in Chapter Six, the major implications for practice are as follows:

Clear strategy policy: The research evidence indicates that a clear and transparent mission and vision and the practice of five-year business planning and annual budgeting pushes SME to adopt a proper PMS to monitor their actual versus budgeted performance. As empirically indicated, this is one of the core driving factor. A clear policy positively affects other organizational factors in the adoption of PMS. Therefore, it is imperative for practitioners to take the development of a clear mission and vision as their starting point. The multiple effects of this will facilitate the adoption of PMS.

Appropriate management style in relation to organizational culture: Tannenbaum and Schmidt (1973) declared that it is essential that management understand the existing organizational culture before implementing any change in management style. As shown in the research evidence, it does not matter what management style the manager adopts but rather it depends on the existing organizational or work culture within the company. This finding does not support the findings of Dahlgaard-Park (2009), who claims that the chance of successful PMS adoption will be influenced by the existence of a culture favoring innovation and continuous learning. The empirical evidence from this research does not totally support this notion at that a culture that resists change could also adopt PMS successfully if the manager adopted an authoritative management style.

The research evidence also shows that the lack of a positive relationship between employer and employees arises when the management does not engage in prior discussion of targets. The lack of such consultation hinders successful adoption of PMS. Thus, it is important for management to practice a more open-door policy towards the employees to ensure buy-in to the system by the subordinates.

Management training: The empirical evidence here confirms much previous research which indicated the importance of management training (Kaplan & Norton, 1996; Richardson, 2004; Gomes *et al.*, 2011 and Tung *et al.*, 2011). Most managers in SME in Brunei are short of understanding of certain management terms and concepts and even those who do know the terms and concepts either do not have an in-depth understanding or they have little experience in managing such concepts in their organization. This matter is worsened by the lack of management expertise available in the country as a whole. At the macro level, locals prefer to work in the public sector, where the pay is much higher. The shortage of management expertise could be overcome if the SME invested more in training their management teams to familiarize them with the management concepts relating to PMS. This will encourage the successful adoption of PMS (Sousa *et al.*, 2006). Alternatively, there is an opening for management consultancy firms to take advantage of the situation by offering the requisite training (Chan, 2004; Bourne *et al.*, 2005; Turner *et al.*, 2005).

Good corporate governance: Evidence from Garengo and Bititci (2007) and from this thesis, point to the fact that entrepreneurs are reluctant to share information with the other members of their organization. It is common for SME business owners in Brunei to be directly involved in both the strategic planning and the daily operational activities of their companies. This is a consequence of their small size. This empirical evidence from this study shows it is good practice for the owner to be involved at the strategic level to ensure that the management team understands the mission and vision that need to be incorporated into the PMS. It is also common for SME owners to become involved in daily operations but these owners need to bear in mind that a proper PMS is needed in order to minimize their micro-management of the company. Micro-management distracts the owner from focusing their attention on more strategic matters. Thus, high involvement of the owner at the strategic level with low involvement at the operational level will encourage the adoption of PMS. If the owner still feels it necessary to become involved at the operational level, they should not lose sight of the importance of an effective PMS or, better still, employ non-family management executives (Gubitta & Gianecchini, 2002).

Information technology support: The findings of previous studies such as those conducted by Hudson *et al.* (2001), Bourne *et al.* (2002) and Bititci *et al.* (2002), which highlighted the influence of IT issues, have been confirmed by this research. The most common issues of poor IT support and investment are compounded by the low rewards on offer in private sector SME in Brunei compared with the public sector and larger organizations. At present, it would be difficult for SME to gain access to the human resource market in this area unless the private sector firms are willing to offer competitive benefits.

Our empirical findings also indicate the relationship between organizational culture and the use of information technology. The lack of an IT culture in most of the case companies has hampered the progress of their performance measurement system to a more advanced level. This conforms to the earlier findings of Hudson *et al.* (2001). It is interesting to note that this situation persists despite that fact that our case companies are financially capable. Clearly, this lack of I.T. expertise added to the lack of management knowledge indicates the need for more training institutions for the younger generation to enrol in. However, this would be a long-term solution which could only be handled at the macro level. Government involvement, especially by the Ministry of Education, would be necessary to resolve this issue.

Another positive effort would be for the 'I-Centre' of Brunei to become involved in developing a PMS suitable for the needs of SME in Brunei. This could be a short-term solution. 'I-Centre' is an incubation centre; a joint venture between the Brunei Economic Development Board (BEDB) and National University of Singapore (NUS) to help new start-up I.T. related businesses (newshub.nus.edu.sg). 'I-Centre' has invested millions of dollars in I.T. related

companies developing various software applications. It would be an appropriate project for them to produce a PMS that is specifically for the use of service SME in Brunei, taking into account the findings documented in this research.

Documentation of work process and procedures: The research findings also highlight the absence of documentation practices amongst the Brunei SME and the difficulty this causes in implementation of PMS. An important aspect of initiating a system is the documentation of existing procedures as it allows the PMS project team to identify proper KPI (Krause, 2003; Philips and Louvieris, 2005). Most of the plans and policies in the case companies exist only in the minds of individual staff members so it is essential that documentation procedures and policies are introduced.

7.6 Research Limitations and Recommendations for Future Research

Although this research has met its aim of providing theoretical and practical insights into the levels of PMS adoption in Brunei and the key factors which account for this situation, as is common in such situations, limitations were encountered in conducting the research. These need to be taken into consideration as they have inevitably affected the study and its contributions. Nevertheless, identification of these limitations can provide direction for further study.

The extent of the access granted to the researcher in collecting data was limited. Only four companies agreed to interviews in the qualitative part of the study. In addition, the interviews took much longer than anticipated because of the busy schedules of the relevant interviewees. As a result of the additional time needed, the interviewees comprised only managers and officers holding management positions. Employees at lower levels of the four companies were excluded, with the result that their perceptions on the adoption of PMS have not been considered. Engaging other stakeholders such as the employees, shareholders, policy-makers, suppliers and customers to ascertain their perception on the companies' current PMS would complement the findings of this research. Future research could involve the perspectives of non-management stakeholders to enrich the data composition. This would enable a more holistic stakeholder-approach of data collection, helping to throw light on the different PMS requirements and expectations of the different internal and external stakeholder groups.

The questionnaires designed for the quantitative research were distributed to either the owner or manager of each company. Many of the candidates approached were either unavailable or lacked the interest to be involved. The specific requirement for respondents only from the managerial level resulted in a low rate of response.

The framework developed in this research to empirically test the influence of organizational factors on PMS revealed two factors additional to the six resulting from the literature as well as the interplay between all of the identified factors. This framework has been applied in a service sector setting but could be further tested in other settings for validation. The research also provides a starting point for other researchers interested in this area to investigate organizational factors from other perspectives. A survey-based data collection method should be used to investigate these relationships while statistical data analysis could be used to investigate the strength and direction of their relationships. This would help practitioners to prioritize the factors that have the greatest all round impact so their time and efforts will be spent productively.

Another possible avenue for future research is the area of performance measurement evaluation systems or guidelines used by financiers such as banks and institutional investors in assessing SME. Presently, it is a common practice of a bank or financing organization to evaluate the performance of fund applicants using financial and historical measures. This has created difficulties for most SME in obtaining financial assistance. It would be beneficial for a future researcher to come up with an evaluation system framework that is more balanced and with future-orientated assessment for these organizations.

A similar analysis which focuses mainly on 'mission and vision' development and its effects on performance measurement adoption should be conducted. More research is needed on the findings on the impact of 'mission and vision' development and performance measurement systems as empirical research conducted in the four case studies suggested that this is the key influence on the adoption of a performance measurement system. This assertion has not been extensively explored in the literature.

Future research could also take into account the unique characteristics of the contextual subject of this study. Brunei is an oil-driven economy in which the majority of big companies and a significant number of other businesses are related directly to the petroleum industry. SME play an important supporting role in economic diversification. Given this situation, it would be fruitful for researchers to consider the characteristics of the business activity in the country at a macro-level in order to understand the effect of the country's policy on economic diversification on PMS adoption in SME.

Further exploiting the Brunei context, PMS practices in the country's oil-related service SME might be analyzed. The findings obtained could be compared and contrasted with these findings on companies not connected to oil and petroleum development. It is extremely likely that PMS practices in oil-related countries will differ, especially considering how much influence the oil and gas producers have in the country. A supply chain literature could be

used to investigate this relationship and to understand its influence on the PMS practices and levels of adoption in oil and gas industry suppliers.

The influence of the local government plays a critical role in prompting PMS in the case companies in this research. Thus, another area for research would be to understand the structure of the government. Brunei is a Sultanate ruled by an absolute monarchy. It would be beneficial to understand how this fairly unusual structure of government affects the adoption of PMS, not just in the SME sector but in business activities as a whole. It has been mentioned previously that the bulk of the available research has focused on developed countries, most of which have democratic regimes. The contrasting contexts would be a fruitful avenue of exploration.

7.7 Chapter Conclusion

This research has contributed to the development of PMS literature through its investigation of systems in a developing country. The empirical findings of previous studies indicated a framework of six 'best practices' for PMS and the validity of this framework was tested in the context of service sector SME, thus filling in the gap in the literature. The findings show that the dimensions of measures used by SME to evaluate their performance are more balanced than commonly claimed.

Strategy guides both the purpose and bases of the selection of measures but the use and development of these is the responsibility of individuals rather than teams. This is a consequence of the smaller size of these companies. Although this factor permits greater flexibility in the implementation and use of PMS, the lack of IT support means that, certainly in three of the case study companies, the PMS is not integrated with other management systems, thus limiting its flexibility in practice. On balance though, PMS practice in Brunei appears no worse than in its international counterparts.

The study has narrowed a gap in the literature by offering a conceptual framework and empirical evidence that SME do follow most of the 'best practices' available in the current literature. Finally, it has confirmed and added to knowledge about the relative strengths and directions of organizational factors affecting the adoption of PMS.

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APPENDIX 1 - Brunei Labor department list of registered companies

JUMLAH MAJIKAN MENGIKUT KERAMAIAAN PEKERJA DAN JENIS KUMPULAN INDUSTRI								
BAGI TAHUN 2008								
JENIS KUMPULAN INDUSTRI	MAJIKAN MENGIKUT KERAMAIAAN PEKERJA							
	JUMLAH MAJIKAN AKTIF	1-5	6 - 10	11 - 20	21 - 50	51 - 100	101- 50	>500
1 PERTANIAN, PERHUTANAN DAN PERIKANAN	981	739	175	38	15	9	5	0
Pertanian	778	603	131	24	9	6	5	0
Perhutanan	11	3	4	0	3	1	0	0
Perikanan	192	133	40	14	3	2	0	0
2 INDUSTRI MINYAK DAN GAS	27	4	5	2	6	5	4	1
3 KILANG PAPAN DAN LAIN-LAIN INDUSTRI PENGOLAHAN KAYU	33	3	6	14	7	2	1	0
4 PERLOMBONGAN, KUARI DAN INDUSTRI MEMBUAT	1,570	977	340	152	65	19	14	3
Kuari	21	3	5	8	5	0	0	0
Industri Permakanan, Minuman dan Tembakau	84	24	24	25	7	2	2	0
Tukang Jahit dan Tukang Kasut	1,021	742	210	53	13	3	0	0
Pembuat Perabot dan Perkakas Kayu	52	19	12	7	10	3	1	0
Percetakan dan Penerbitan	67	34	11	12	7	2	1	0
Pembuatan Batu Bata	7	0	3	2	0	2	0	0
Pembuatan Barang-Barang Logam (Selain daripada Logam Berharga)	39	17	7	8	6	1	0	0
Tukang Emas, Tukang Perak dan Pembuatan Barang-Barang Kemas	43	25	14	1	3	0	0	0
Industri Pembuatan yang tidak diperjeniskan	226	112	54	36	14	6	4	0
Pembuatan Pakaian	10	1	0	0	0	0	6	3
5 PEMBINAAN	1,630	492	411	347	247	81	46	6
6 PERDAGANGAN JUAL BORONG DAN JUAL RUNCIT	1,947	1,075	432	257	127	37	18	1
Wakil Pengimport, Pengeksport dan Perniagaan Jual Runcit	696	347	147	116	62	16	8	0
Kedai Gerai, Stesyen Minyak dan Lain-Lain Perniagaan Jual Runcit	1,251	728	285	141	65	21	10	1

7	HOTEL, RESTORAN DAN KEDAI KOPI	913	376	249	175	83	20	8	2
	Hotel	27	4	2	6	7	4	2	2
	Restoran dan Kedai Kopi	886	372	247	169	76	16	6	0
8	PENGANGKUTAN, PENYIMPANAN DAN PERHUBUNGAN	393	237	68	40	33	7	7	1
	Perkhidmatan Pengangkutan Darat	282	191	36	27	21	3	4	0
	Perkhidmatan Pengangkutan Laut, Sungai dan Pengendalian Pelabuhan	42	15	9	8	5	2	3	0
	Perkhidmatan Pengangkutan Udara dan Lapangan Terbang	7	1	3	2	0	0	0	1
	Wakil Pengembaraan, Perkhidmatan Penyimpanan dan Pembungkusan	62	30	20	3	7	2	0	0
9	PERKHIDMATAN KEWANGAN, INSURAN DAN PERDAGANGAN	484	233	108	77	38	11	14	3
	Bank dan Lain-lain institusi-intitusi kewangan	49	25	9	2	4	4	3	2
	Perkhidmatan insuran, akauntan, undang-undang dan pertubuhan-pertubuhan ikhtisas perdagangan	141	78	29	17	11	1	5	0
	Perkhidmatan Kejuruteraan arkitek dan ternikal	294	130	70	58	23	6	6	1
10	PERKHIDMATAN MASYARAKAT, SOSIAL DAN PERSENDIRIAN	1,324	730	315	167	84	13	14	1
	Perkhidmatan-perkhidmatan latihan pendidikan dan bimbingan, keugamaan dan kebajikan, dan perubatan dan Kesihatan	341	187	76	30	30	9	9	0
	Perkhidmatan Keriaan dan Kebudayaan	28	13	4	3	6	0	2	0
	Membaiki Kereta dan basikal	261	92	81	60	24	3	1	0
	Membaiki alat-eletrik dan lain-lain perkhidmatan pembaikan	214	116	51	28	15	1	2	1
	Dobi	68	47	9	10	2	0	0	0
	Kedai Gunting dan Kedai Solek	380	255	89	31	5	0	0	0
	Fotografi dan perkhidmatan yang berkaitan	32	20	5	5	2	0	0	0
	JUMLAH	9,302	4,866	2,109	1,269	705	204	131	18

APPENDIX 2 - List of samples SMEs

District: Brunei & Muara (10 out of 294)

1	SYARIKAT SUHARJO	NO 17B KAMPONG PASAI II SENGKURONG JLN BUNGA MERAH
2	SYKT HIMALAY ENT	SPG 29-59 NO.61 KG SELAYUN SENGKURONG 'B'
3	PERUSAHAAN HANI HASYMA	NO.46 SPG 256-45 JLN RIMBA KG RIMBA GADONG
4	VN RECYCLING SDN BHD	UNIT NO 21, BLK C, COMPLEX MELABAU UTAMA, SERUSOP
5	SYARIKAT HANIMAH	P.O.BOX 332 BANDAR SERI BEGAWAN
6	NORAIN HJ AZIZ TRADING COMPANY	P.O.BOX 772 BANDAR SERI BEGAWAN
7	QAF TRADING SDN BHD	P.O.BOX 85 SERI COMPLEX JLN TUTONG
8	DE DIRECTRENDZ CO.	P.O.BOX 888 MPC BSB
9	APADANA ENTERPRISE	#7 SPG 43 JLN BAN 3A KG KILANAS MULAUT BSB
10	SYARIKAT PERUSAHAAN NORISMAN	P.O.BOX 2782 BANDAR SERI BEGAWAN

District: Belait (10 out of 47)

1	DEL-AZIM MARKETING & PRINTING	P.O.BOX 1395 KUALA BELAIT
2	HARMUIZ SUPPLIER	LOT 193 JLN BUNGA KUNING SERIA
3	C & G SENDIRIAN BERHAD	NO.36 JLN PEMANCHA KUALA BELAIT
4	FARAHYAH BAKERY & CATERING	NO 24 SPG 120-48-35-28 STKRJ MUMONG BELAIT
5	PERUSAHAAN AJMAIN BIN SIPUT	NO 8 SPG 131, JLN ANDULAU, SG LIANG BELAIT KC1535
6	D'HOTS COLLECTION	P.O.BOX 255 KUALA BELAIT
7	JX COLLECTION	P.O.BOX 1108 KUALA BELAIT
8	SYARIKAT KIEW YIN LIONG	NO.1 SPG 94-37 JLN SELATAN SATU KG. PERPINDAHAN SERIA
9	HB WINSTAR PHOTO STUDIO & TRADING	NO 9 SPG 211 KG SG TARING, LUMUT KC3135
10	MIN SOON CO	P.O.BOX 582 KUALA BELAIT

District: Tutong (5 out of 15)

1	SYKT ZAHIMAH DAN KELUARGA	1386,KAMPONG PADNUNOK
2	HIB CONTRACTOR	NO 30 SPG 28, JLN PADANG, KG PENANJONG TUTONG TA2741
3	HO TYAN DISPENSARY	P O BOX 77, TUTONG TA1141
4	SYARIKAT DYG HAMIDAH BTE MAHMUD/MAHAMUD BERSAUDARA	NO 4 SPG 612 JLN TANJONG MAYA, KG PENAPAR, TUTONG TD1741
5	SYARIKAT HJ JUDIN & ANAK-ANAK	NO 1581 SPG 1581, KG LAMUNIN, TUTONG

District: Temburong (1 out of 1)

1	CHOP HUA GUAN	P.O.BOX 6 PEKAN BANGAR TEMBURONG
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APPENDIX 3 – Letter sent to all four case companies



Mr. D6
Marketing Manager
Case D
Bangunan Jaya Setia,
Kg. Jaya Setia,
Berakas
Negara Brunei Darussalam

Masairol Haji Masri
Manchester Business School
The University of Manchester
Booth Street West, Manchester, M15 6PB
United Kingdom

Date: 28/02/2010

Dear Sir,

REF: CASE STUDY ON PERFORMANCE MEASUREMENT SYSTEM

First of all, I would like to thank you for your generous hospitality during our previous meeting. Here, I am providing the necessary documents and information as requested.

As mentioned before, I am an academic officer from the Department of Business and Administration, Faculty of Business, Economics and Policy Studies, Universiti Brunei Darussalam. Currently, I am attending a PhD course under the supervision of Dr. David Bamford in the Department of Business System, Manchester Business School at the University of Manchester, United Kingdom.

The purpose of this letter is to formally request for Case D to be part of my case study for the purpose of my PhD research thesis with preliminarily titled as 'Performance Measurement for Small and Medium Enterprises: The case of Brunei Darussalam'.

This research will involve several procedures as follows:

1. Interviewing managers and staff of your organization
2. Once a week non-participatory observation for three months (proposed schedule is attached with this letter)

3. Non-participatory observation in management meeting(s)

For your information, data gathered from the interview(s), observation and any documentation will be kept confidential and will only be use for academic purposes. The university 'Ethical Guidelines', the approved 'Research Ethics Form' by the "Manchester Business School Postgraduate Research Ethics Committee" (reference number MBSPGR/N304) and other related documents are attached with this letter for your reference.

I hope your organization would have no objection to my request and would hope that I be able to share my results from the analysis with you in the future. If you have any further questions concerning the research study, please call the researcher, MASAIROL HAJI MASRI at this phone number: 8782216 or send an e-mail at masairol.hajimasri@postgrad.mbs.ac.uk or alternatively you can contact my supervisor, Dr. David Bamford at his office number: +441613063429 or send an email at david.bamford@mbs.ac.uk.

I am looking forward for your positive response and I thank you in advance for your kind attention and cooperation.

With respect,
MASAIROL HAJI MASRI
Business and Management Dept Officer, FBEPS,UBD
In-Service Training Scheme
Doctor of Philosophy,
University of Manchester,
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Tel:+447529356628



Miss B2
Assistant Managing Director
Case B
Negara Brunei Darussalam

Masairol Haji Masri
Manchester Business School
The University of Manchester
Booth Street West, Manchester, M15 6PB
United Kingdom

Date: 18/11/2009

Sir

REF: REQUEST FOR INTERVIEW

I am an academic officer from the Department of Business and Administration, Faculty of Business, Economics and Policy Studies, Universiti Brunei Darussalam. Currently, I am attending a PhD course under the supervision of Dr. David Bamford in the Department of Business System, Manchester Business School at the University of Manchester, United Kingdom.

I would like to kindly request for Case B to be part of my case study for the purpose of my PhD research thesis with preliminarily titled as 'Performance Measurement for Small and Medium Enterprises: The case of Brunei Darussalam'. For your information, data gathered from the interview(s) will be kept confidential and will only be use for academic purposes.

If your company has no objection to my request, I will start conducting the interview by May or June 2010. I would really hope for your cooperation on the above matter and would hope that I would be able to share my results from the analysis with you in the future. If you have any further questions concerning the research study, please call the researcher, MASAIROL HAJI MASRI at this phone number: 8782216 or send an e-mail at masairol.hajimasri@postgrad.mbs.ac.uk or alternatively you can contact my supervisor, Dr. David Bamford at his office number: +441613063429 or send an email at david.bamford@mbs.ac.uk.

I thank you in advance for your kind attention and cooperation.

With respect,

MASAIROL HAJI MASRI

Business and Management Dept Officer, FBEPS, UBD

In-Service Training Scheme

Doctor of Philosophy,

University of Manchester,

United Kingdom

E-mail: masairol.hajimasri@postgrad.mbs.ac.uk

Tel: +447529356628



Dr. C2
General Manager,
Case C,
Bangunan Fakhriah,
No.157 Jalan Kumbang Pasang,
Bandar Seri Begawan, BS8411
Negara Brunei Darussalam

Masairol Haji Masri
Manchester Business School
The University of Manchester
Booth Street West, Manchester, M15 6PB
United Kingdom

Date: 28/02/2010

Sir

REF: REQUEST FOR INTERVIEW

First of all, I would like to thank you for your generous hospitality during our previous meeting. I am providing the necessary documents and information as requested. As mentioned before, I am an academic officer from the Department of Business and Administration, Faculty of Business, Economics and Policy Studies, Universiti Brunei Darussalam. Currently, I am attending a PhD course under the supervision of Dr. David Bamford in the Department of Business System, Manchester Business School at the University of Manchester, United Kingdom. The purpose of this letter is to formally request for Case C to be part of my case study for the purpose of my PhD research thesis with preliminarily titled as 'Performance Measurement for Small and Medium Enterprises: The case of Brunei Darussalam'.

This research will involve several procedures as follows:

1. Interviewing managers and staff of your organization
2. Once a week non-participatory observation for three months (proposed schedule is attached with this letter)
3. Non-participatory observation in management meeting(s)

For your information, data gathered from the interview(s), observation and any documentation will be kept confidential and will only be use for academic purposes. The university 'Ethical Guidelines', the approved 'Research Ethics Form' by the

"Manchester Business School Postgraduate Research Ethics Committee" (reference number MBSPGR/N304) and other related documents are attached with this letter for your reference. I hope your organization would have no objection to my request and would hope that I be able to share my results from the analysis with you in the future. If you have any further questions concerning the research study, please call the researcher, MASAIROL HAJI MASRI at this phone number: 8782216 or send an email at masairol.hajimasri@postgrad.mbs.ac.uk or alternatively you can contact my supervisor, Dr. David Bamford at his office number: +441613063429 or send an email at david.bamford@mbs.ac.uk.

I am looking forward for your positive response and I thank you in advance for your kind attention and cooperation.

With respect,
MASAIROL HAJI MASRI
Business and Management Dept Officer, FBEPS,UBD
In-Service Training Scheme
Doctor of Philosophy,
University of Manchester,
United Kingdom
E-mail:masairol.hajimasri@postgrad.mbs.ac.uk
Tel:+447529356628



Miss A3
Senior Manager,
Finance Division,
Case A,
Negara Brunei Darussalam

Masairol Haji Masri
Manchester Business School
The University of Manchester
Booth Street West, Manchester, M15 6PB
United Kingdom
Date: 30/11/2009

Assalamualaikum; Madam

REF: REQUEST FOR INTERVIEW

I am an academic officer from the Department of Business and Administration, Faculty of Business, Economics and Policy Studies, Universiti Brunei Darussalam. Currently, I am attending a PhD course under the supervision of Dr. David Bamford in the Department of Business System, Manchester Business School at the University of Manchester, United Kingdom. I would like to kindly request for Case A to be part of my case study for the purpose of my PhD research thesis with preliminarily titled as 'Performance Measurement for Small and Medium Enterprises: The case of Brunei Darussalam'. This research will involve interviewing some officers at the managerial level. For your information, data gathered from the interview(s) will be kept confidential and will only be use for academic purposes. If your company has no objection to my request, I will start conducting the interview by May or June 2010.

I would really hope for your cooperation on the above matter and would hope that I would be able to share my results from the analysis with you in the future. If you have any further questions concerning the research study, please call the researcher, MASAIROL HAJI MASRI at this phone number: 8782216 or send an e-mail at masairol.hajimasri@postgrad.mbs.ac.uk or alternatively you can contact my supervisor, Dr. David Bamford at his office number: +441613063429 or send an email at david.bamford@mbs.ac.uk.

I thank you in advance for your kind attention and cooperation.

Wassalam and with respect,
MASAIROL HAJI MASRI
Business and Management Dept Officer, FBEPS,UBD
In-Service Training Scheme
Doctor of Philosophy,
University of Manchester,
United Kingdom
E-mail:masairol.hajimasri@postgrad.mbs.ac.uk
Tel:+447529356628

APPENDIX 4 – Fieldwork Schedule

MONTHS	March	April	Activities	May	Companies	June	Companies	July	Companies	Aug	Companies	Sept	Companies
DAYS	Date	Date	Days	Date	Date	Date	Date	Date	Date	Date	Date	Date	Date
W												1	
T		1					CASE A	1	CASE D			2	
F		2					CASE D	2				3	
S		3				1	Start Stage 2	3				4	
S		4		2		2		4		1		5	
M	1	5		3	CASE B	7	CASE B	5	CASE B	2		6	
T	2	6		4		8		6	CASE C	3	CASE C	7	CASE C
W	3	7		5	CASE A	9	CASE A	7	CASE A	4		8	
T	4	8		6		10	CASE D	8	CASE D	5	CASE D	9	
F	5	9		7		11		9		6		10	
S	6	10		8		12		10		7		11	
S	7	11		9		13		11		8		12	
M	8	12		10	CASE B	14	CASE B	12	CASE B	9		13	
T	9	13		11		15		13	CASE C	10	CASE C	14	CASE C
W	10	14		12	CASE A	16	CASE A	14	CASE A	11		15	
T	11	15		13		17	CASE D	15	CASE D	12	CASE D	16	
F	12	16		14		18		16		13		17	
S	13	17		15		19		17		14		18	
S	14	18		16		20		18		15		19	
M	15	19		17	CASE B	21	CASE B	19	CASE B	16		20	
T	16	20		18		22		20	CASE C	17	CASE C	21	CASE C
W	17	21		19	CASE A	23	CASE A	21	CASE A	18		22	
T	18	22		20		24	CASE D	22	CASE D	19	CASE D	23	
F	19	23	Arrive Brunei	21		25		23		20		24	
S	20	24		22		26		24		21		25	
S	21	25		23		27		25		22		26	
M	22	26	Start Stage 1	24	CASE B	28	CASE B	26	CASE B	23		27	
T	23	27		25		29		27	CASE C	24	CASE C	28	CASE C
W	24	28		26	CASE A	30	CASE A	28	CASE A	25		29	
T	25	29		27				29	CASE D	26	CASE D	30	
F	26	30	End Stage 1	28				30		27			
S	27			29				31		28			
S	28			30						29			
M	29			31	CASE B					30			
T	30									31	CASE C		



Dear Sir/Madam,

My name is Masairol Haji Masri, a lecturer/researcher in the Faculty of Business, Economics and Policy Studies, University of Brunei Darussalam. I am currently undertaking a PhD research under the supervision of Dr. David Bamford, Manchester Business School at the University of Manchester, United Kingdom.

I am inviting you to participate in our research entitled '**Performance Measurement System for Small and Medium Enterprises: The Case of Brunei Darussalam**'. The main purposes of this research are to collect data on:

- i. The current level of Performance Measurement Systems and;
- ii. Factors that might influence the development of Performance Measurement Systems among service SMEs in Brunei Darussalam

As this research is very industry and country specific i.e. **Service SMEs in Brunei Darussalam**, it is expected that the information gathered would be beneficial in your strategic planning development. Thus, it is our best intention to report back the results of this research study to your organization in the form of:

- i. A one-page Executive Summary and;
- ii. A 10-page Report on the result of the research

In addition, the results of the research study will also be available to the public in the near future, however your organization will remain anonymous.

If you have any questions concerning the research study, please do not hesitate to contact me at this phone number: +673 8782216 or e-mail masairol.hajimasri@postgrad.mbs.ac.uk

Thank you for your time and cooperation.

Sincerely,

Masairol Haji Masri

INSTRUCTIONS:

1. Section 1 of this questionnaire consists of questions related to you. Please **tick** the answer most appropriate to you.
2. Section 2 of this questionnaire consists of questions related to your company background. Please **tick** the answer most appropriate to your company.
3. Section 3 of this questionnaire consists of questions related to your company performance measurement system. Please **circle** the answer most appropriate to your company.
4. Section 4 of this questionnaire consists of six sub-sections that are related to six organizational factors. Please **circle** the answer most appropriate to your company.

SECTION 1

YOUR PERSONAL BACKGROUND

1. Gender:

- ☐ Male
- ☐ Female

2. Your age:

- ☐ Less than 20 years
- ☐ 20 – 29 years
- ☐ 30 – 39 years
- ☐ 40 – 49 years
- ☐ More than 50 years old

3. Your highest level of qualification (please select only one):

- ☐ Primary Certificate
- ☐ Secondary Certificate
- ☐ College Diploma or Certificate
- ☐ Undergraduate Degree
- ☐ Masters Degree
- ☐ Doctorate/Professional Qualification

4. Your relationship with the company:

- ☐ Owner and a Manager
- ☐ Manager, but not an Owner
- ☐ Owner, but not a Manager
- ☐ Others (please specify):

5. Do you have legal ownership over the company?

- ☐ Yes
- ☐ No

6. Your professional background i.e. your area of expertise (**please select only one**):

- ☐ Accounting/Finance
 - ☐ Sales/Marketing
 - ☐ Human Resources
 - ☐ Information Systems
 - ☐ Operations
 - ☐ Technical/Engineering
 - ☐ Administration/Management
 - ☐ Others (please specify):
-

SECTION 2

COMPANY BACKGROUND

1. Name of Company (**optional**):

2. Years of Operation:

- ☐ Less than 6 years
- ☐ 6 to 10 years
- ☐ 11 to 15 years
- ☐ 16 to 20 years
- ☐ More than 20 years

3. Ownership:

- ☐ Locally-owned
- ☐ Joint Venture (Foreign and Local)
- ☐ Foreign-owned subsidiary
- ☐ Corporate ownership
- ☐ Semi-government
- ☐ Others (please specify):

4. Number of Employees:

- ☐ 1 to 5
- ☐ 6 to 10
- ☐ 11 to 20
- ☐ 21 to 50
- ☐ 51 to 100
- ☐ More than 100

5. Please indicate the main type of business your company are currently doing (**please select only one**):

- ☐ Import and export representative
- ☐ Retail
- ☐ Hotel & Travel
- ☐ Food and Beverages
- ☐ Transportation Services
- ☐ Packaging Services
- ☐ Financial Institution (Bank, Insurance, etc)
- ☐ Professional Services (Accountant, Lawyer, Consultancy, Advertising, etc)
- ☐ Engineering, architecture and Technical services
- ☐ Education services
- ☐ Health services
- ☐ Maintenance and Repairs services
- ☐ Personal care services (Saloon, Spa, etc)
- ☐ Others, please specify

SECTION 3

This section asks you to describe the performance measurement systems of your company. Please describe as it generally are **NOW**, not as you wish it to be.

PERFORMANCE MEASUREMENT SYSTEMS

1. Performance Measures

How extensively are the following **measures** used in **evaluating your performance**? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Financial Performance (e.g. Return on Investment, Sales, Net profit, Debtors day report, etc)	1	2	3	4	5
b. Competitiveness (e.g. Winning and retaining business, Client relationships, New services/lines introduced, Ranking with branches/competitors, etc)	1	2	3	4	5
c. Quality of services (e.g. Customer satisfaction rating, Compliance with standards, Timely completion, Customer-follow-up, Security, etc)	1	2	3	4	5
d. Flexibility of operations and people (e.g. Competency assessment of staff, Feedback rating of staff, Specification flexibility, Volume Flexibility, etc)	1	2	3	4	5
e. Resource utilization (e.g. Recovery rates, Utilization of staff, etc)	1	2	3	4	5
f. Innovation (e.g. Understanding client needs, new product/service processes, Individual innovations, etc)	1	2	3	4	5

2. Performance Measurement selection criteria

How extensively are the following **criteria** used as a **basis for the above measures**? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Contact time with customers.	1	2	3	4	5
b. Customers served per day.	1	2	3	4	5
c. Level of service/product customization.	1	2	3	4	5
d. Level of discretion given to employees.	1	2	3	4	5
e. Level of interaction with customers.	1	2	3	4	5
f. Level of process orientation.	1	2	3	4	5
g. Level of front-office orientation.	1	2	3	4	5
h. Process of service experience.	1	2	3	4	5
i. End result of service experience.	1	2	3	4	5
j. Employees recommendation.	1	2	3	4	5
k. Derived from strategy.	1	2	3	4	5
l. Its linkage of operations to strategic goals.	1	2	3	4	5
m. Its ability to provide fast, accurate feedback.	1	2	3	4	5
n. Its ability to trigger changes to the strategy.	1	2	3	4	5
o. Cost effective to collect.	1	2	3	4	5
p. Time efficient to collect.	1	2	3	4	5

3. Purpose of measuring performance

How extensively are the following **criteria** used as a **purpose for measuring performance**? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Monitor past performance.	1	2	3	4	5
b. Monitor employee's performance.	1	2	3	4	5
c. Make corrective actions.	1	2	3	4	5
d. Ensure employees perform their tasks accordingly.	1	2	3	4	5
e. Control cost.	1	2	3	4	5
f. Determining award and bonus.	1	2	3	4	5
g. Plan future performance.	1	2	3	4	5
h. Improve customer's satisfaction.	1	2	3	4	5
i. Improve the quality of services.	1	2	3	4	5
j. Improve current strategy.	1	2	3	4	5
k. Identify defects in strategy.	1	2	3	4	5
l. Meet requirements of external stakeholders.	1	2	3	4	5
m. For continuous improvement.	1	2	3	4	5

4. Accountability of Performance measures

How extensively is the following **characteristic** best **reflects the design of your performance measurement system**? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Lowest level of performance measures is aligned with the strategic goal of the organization.	1	2	3	4	5
b. All staff focuses their attention and efforts on the organization's strategic objectives.	1	2	3	4	5
c. Causal relationship of each measures were clearly shown.	1	2	3	4	5
d. An appointed person/team is assigned to monitor the high level measures.	1	2	3	4	5
e. Mid-level managers are assigned to be responsible for their own unit's individual performance measures.	1	2	3	4	5
f. Procedures for performance measurement process are in place and clearly defined.	1	2	3	4	5
g. Managers' opinions from different managerial levels are taken into account in developing the performance indicators.	1	2	3	4	5
h. Opinion of customers taken into account in developing the performance indicators.	1	2	3	4	5
i. Opinion of employees taken into account in developing the performance indicators.	1	2	3	4	5
j. Opinion of suppliers taken into account in developing the performance indicators.	1	2	3	4	5
k. Opinion of other external stakeholders (such as the government and the public) taken into account in developing the performance indicators.	1	2	3	4	5

5. Flexibility and Interactive level of Performance Measurement System

How extensively is the following characteristics best reflect the design of your performance measurement system? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Flexible, rapidly changeable and maintainable.	1	2	3	4	5
b. Ability to track changes in the environment.	1	2	3	4	5
c. Easy to implement, use and run.	1	2	3	4	5
d. Easy to communicate.	1	2	3	4	5
e. Graphically and visually effective.	1	2	3	4	5

6. Integration of Performance Measurement System

How extensively is the following characteristics best reflect the design of your performance measurement system? Please circle.

1	2	3	4	5
Not at all	Little	Some	Considerably	Extremely

a. Management systems and processes are integrated.	1	2	3	4	5
b. There is a dynamic relationship among different departments, units, teams etc in the company.	1	2	3	4	5
c. Improvement initiatives are adopted for the benefit of the whole organization.	1	2	3	4	5
d. Different functional systems are integrated into our performance measurement system.	1	2	3	4	5
e. Different performance report can be easily communicated and access simultaneously.	1	2	3	4	5
f. Performance measures are linked to rewards system.	1	2	3	4	5
g. Integration of performance measurement system is supported by our technological capability.	1	2	3	4	5

SECTION 4

This section asks you to describe six organizational factors related to your company. Please describe as it generally are **NOW**, not as you wish it to be.

1. CORPORATE GOVERNANCE

Based on your observation, please indicate (**circle**) the degree of owners'/shareholders' involvement in the company concerning the following activities:

1	2	3	4	5
Not at all Involved	Slightly Involved	Somewhat Involved	Fairly Involved	Very Involved

1. Strategic Involvement					
a. Set/develop the strategic objectives	1	2	3	4	5
b. Develop the strategic options	1	2	3	4	5
c. Evaluate the strategic options	1	2	3	4	5
d. Implement corporate strategy	1	2	3	4	5
e. Evaluate the implementation of strategy	1	2	3	4	5
2. Operational Involvement					
a. Decisions on employment	1	2	3	4	5
b. Decisions on credit terms to customers	1	2	3	4	5
c. Decisions on purchasing activities	1	2	3	4	5
d. Decisions on marketing activities	1	2	3	4	5
e. Decisions on investment	1	2	3	4	5
f. Decisions on operational activities	1	2	3	4	5

2. MANAGEMENT STYLE

Based on your observation, please indicate (**circle**) your agreement or disagreement with the following statements that best describe the management style of your company:

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

a. The management encourages all employees to develop their talents and abilities	1	2	3	4	5
b. This organization emphasis is on adapting effectively to constant environmental change	1	2	3	4	5
c. Policies in this company are reviewed by those who are affected before being implemented	1	2	3	4	5
d. Jobs in this company are clearly defined; everyone knows exactly what is expected of a person in any specific job.	1	2	3	4	5
e. Everyone in this company knows who their intermediate supervisor is; line for reporting is clearly defined	1	2	3	4	5
f. There are clear outlined procedures that define the sequence of actions that everyone is expected to follow	1	2	3	4	5
g. This company has clear rules and regulations that everyone is expected to follow	1	2	3	4	5
h. All decisions in this company must be reviewed and approved by upper level management	1	2	3	4	5
i. Work groups are generally held on project or case basis and change often in this company	1	2	3	4	5

3. HUMAN CAPITAL

1. Please indicate (**tick**) the levels of working experience of your management team (in years).

	Working Experience (in years)					
Functions/ Departments	Less than 1 year	1 to 5 years	6 to 10 years	11 to 15 years	16 to 20 years	More than 20 years
a. Finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Human Resource	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Administration & Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate (**circle**) the education level of your management team.

	Education Level					
Functions/ Departments	Primary Certificate	Secondary Certificate	College Diploma or Certificate	Undergraduate Degree	Masters Degree	Doctorate/ Professional Qualification
a. Finance	1	2	3	4	5	6
b. Marketing	1	2	3	4	5	6
c. Operation	1	2	3	4	5	6
d. Human Resource	1	2	3	4	5	6
e. Administration & Management	1	2	3	4	5	6

3. Please indicate (**circle**) the frequency of your contact in a year with the following support agency.

1	2	3	4	5
Never	Seldom	Sometimes	Regularly	Very Often

Types of Support					
a. Business counseling	1	2	3	4	5
b. Management consultation	1	2	3	4	5
c. Technical advice	1	2	3	4	5
d. Legal advice	1	2	3	4	5

4. Please indicate (**circle**) the frequency of training in a year attended by your management team.

1	2	3	4	5
Never	Seldom	Sometimes	Regularly	Very Often

Types of Training					
a. Financial management	1	2	3	4	5
b. Marketing management	1	2	3	4	5
c. Service Management	1	2	3	4	5
d. Human Resource Management	1	2	3	4	5
e. Strategic Management	1	2	3	4	5

4. ORGANIZATIONAL CULTURE

The following value characteristics can be used to describe the organizational culture of your company. Based on your observation, please indicate **(circle)** the extent of each of these value items/characteristics is important to your company.

1	2	3	4	5	
Not at all Important	Slightly Important	Somewhat Important	Fairly Important	Highly Important	
a. Innovative	1	2	3	4	5
b. Opportunities	1	2	3	4	5
c. Experimenting	1	2	3	4	5
d. Risk taking	1	2	3	4	5
e. Careful	1	2	3	4	5
f. Rule oriented	1	2	3	4	5
g. Stability	1	2	3	4	5
h. Predictability	1	2	3	4	5
i. Security of employment	1	2	3	4	5
j. No rules	1	2	3	4	5
k. Respect for individual	1	2	3	4	5
l. Fairness	1	2	3	4	5
m. Tolerance	1	2	3	4	5
n. Achievement oriented	1	2	3	4	5
o. Action oriented	1	2	3	4	5
p. High expectations	1	2	3	4	5
q. Results oriented	1	2	3	4	5
r. Precise	1	2	3	4	5
s. Attention to detail	1	2	3	4	5
t. Analytical	1	2	3	4	5
u. Team oriented	1	2	3	4	5
v. Collaboration	1	2	3	4	5
w. People oriented	1	2	3	4	5
x. Aggressive	1	2	3	4	5
y. Competitive	1	2	3	4	5
z. Socially responsible	1	2	3	4	5

5. ORGANIZATIONAL STRATEGY

The following characteristics can be used to describe the organizational strategy of your company. Based on your observation, please indicate **(circle)** the extent each of these characteristics is important to your company.

1	2	3	4	5
Not at all Important	Slightly Important	Somewhat Important	Fairly Important	Highly Important

1. Business Strategy					
a. New product development	1	2	3	4	5
b. Customer service	1	2	3	4	5
c. Operational efficiency	1	2	3	4	5
d. Service quality control	1	2	3	4	5
e. Experienced/trained personnel	1	2	3	4	5
f. Competitive pricing	1	2	3	4	5
g. Service variety	1	2	3	4	5
h. Refining existing services	1	2	3	4	5
i. Brand identification	1	2	3	4	5
j. Innovation in marketing techniques and methods	1	2	3	4	5
k. Control of channels of distribution	1	2	3	4	5
l. Procurement of resources	1	2	3	4	5
m. Minimizing use of outside financing	1	2	3	4	5
n. Serving special geographic markets	1	2	3	4	5
o. Capability to provide specialty services	1	2	3	4	5
p. Services in high price market segments	1	2	3	4	5
q. Advertising	1	2	3	4	5
r. Reputation within industry	1	2	3	4	5
s. Forecasting market growth	1	2	3	4	5
t. Innovation in service processes	1	2	3	4	5

2. Strategy Development					
a. Involvement of all managers	1	2	3	4	5
b. Involvement of employees	1	2	3	4	5
c. Involvement of shareholders	1	2	3	4	5
d. Involvement of suppliers	1	2	3	4	5
e. Involvement of key customers	1	2	3	4	5
f. Involvement of external stakeholders (e.g. government, lenders)	1	2	3	4	5

6. INFORMATION TECHNOLOGY

Based on your observation, please indicate (**circle**) your agreement or disagreement with the following statements that are used to describe the company's usage level of information technology (IT) and the attitudes of members of your company towards IT.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Usefulness of IT					
a. IT used in the company shows improvements on employees' quality of work	1	2	3	4	5
b. IT used in the company demonstrates that members have greater control over their work	1	2	3	4	5
c. IT used in the company demonstrates employees' abilities to accomplish their tasks more quickly	1	2	3	4	5
d. IT used in the company shows good support on critical aspects of employees' jobs	1	2	3	4	5
e. IT used in the company increases employees' work productivity	1	2	3	4	5
f. IT used in the company improves employees' job performance	1	2	3	4	5
g. IT used in the company increases employees' abilities to accomplish more work	1	2	3	4	5
h. IT used in the company enhances employees' job effectiveness	1	2	3	4	5

2. Level of IT Complexity					
a. IT is used for our service delivery	1	2	3	4	5
b. IT is used to obtain real-time information	1	2	3	4	5
c. IT is used to monitor operational activities	1	2	3	4	5
d. Specialized <i>software</i> to perform our tasks	1	2	3	4	5
e. Specialized <i>hardware</i> to perform our tasks	1	2	3	4	5
f. Each level of service production in the company requires a specific piece of technology before proceeding to the next level	1	2	3	4	5
g. Breakdown of IT affects our services production	1	2	3	4	5

3. Level of IT Investment					
a. Our current level of investment in IT is sufficient	1	2	3	4	5
b. The company needs more funds to invest in IT	1	2	3	4	5
c. We have a contingency plan to backup our IT system	1	2	3	4	5
d. IT expenditure investment is too high for the company	1	2	3	4	5
e. We can invest in IT at anytime we need to	1	2	3	4	5
f. Our current investment in IT is comparable to our competitors	1	2	3	4	5

Thank you for your kind cooperation.

APPENDIX 6. SEMI-STRUCTURED INTERVIEW QUESTIONS

A. Background of the interviewee

1. Can you tell me a little bit about yourself?
2. Can you tell me your current position and responsibilities?

B. Current Situation

1. How is your business doing?
2. On what basis do you say that?
3. Do you think your business is performing or not really performing?

C. System

1. Does your organization have a particular system that helps you to keep track of your company's performance?
2. Can you tell me about how your company tracks its performance?
3. Tell me about that system?
4. What are the key indicators that your company uses in the system?
5. So, to what extent do you think the system has helped your company reached its business objectives?

D. Driving and Barrier forces

In your opinion, based on your involvement in performance measurement development in your company, what are the main barriers to PMS development? What factors do you believe drive its development?

1. What about organizational and managerial issues?
2. What about management training and work experience? Does it have an effect?
3. What about your strategy?
4. What about cultural barriers?
5. Can you tell me about your IT infrastructure? How well is it able to support your system?
6. Can you tell me whether the owner gets involved in the strategic planning and the daily operations of the company?
7. Are there any other factors that you can think of that might influence PMS adoption in your company?
8. Can you give some recommendations and suggestions for a firm introducing a PMS?

APPENDIX 7 – COMMENTS AND RESULTS FROM PILOT STUDY

Questionnaire pilot – Feedbacks from respondents & Analysis

Sample: 20

Returned: 14

Returned (with comments only): 1

Overall overview from the respondents:

1. Too long and time consuming
2. Scales need to be inserted at every top of new page for continuous questions
3. Some items seem repetitive
4. Complicated to answer – Especially on Section 2: Human Capital

Detail comments and recommendations by respondents:

Section 1		Comments	Recommended Action
Question 3	Highest level of Education	Some respondents tick more than one especially those with professional qualification	
Question 4	Your current job position in the business	The answer choice does not seem to reflect the question	To split the question into 2. 1. Current job position 2. Business ownership
Question 5	Your professional background	Some respondents tick more than one answer	To give clear instruction of ticking just one answer
	Others	Might be a lot	
Section 2			
Question 2	Number of employees	Need to expand the choice of answer – currently too wide	
Question 3	Type of business	Need to give categories of business for respondents to choose from	
Question 4	The processes	Confusing and does not add value to the questionnaire	Should remove this section
Human Capital	Training	Need to rephrase the question (ref respondent #12); Per annum or overall; In-house training or outside; Difficult to answer, need to give choice of answer	
		Administration	Should change into Administration/Management
	Working experience	Question not clear; Difficult to answer, need to give choice of answer	
	Formal Education	Question not clear; Difficult to answer, need to give choice of answer	Suggest to change to highest level of education (with option)
	Support Agency	Question not clear (ref respondent	

		#12); Difficult to answer, need to give choice of answer; What about R&D?	
Corporate Governance	Ownership	Need to key in one more option i.e. semi-government	
	Owner's involvement	Owner/Shareholders?	To insert shareholders
Management Style	Scale	Scale 2 should be 'disagree' Scale 4 should be 'agree'	
	Items	Some items need to rephrase; Some items seems to be same thus confusing for the respondents; Item no. 19 the term 'economic' to be replaced	
Organizational Culture	Instruction	Grammar (ref to respondent #15)	
Organizational Strategy	Instruction	Grammar (ref to respondent #15)	
Information Technology	Items	Some are confusing, need to clarify what is IT all about; Too long	
Performance Dimension	Question	To rephrase	
	Scale	Scale 5 should be change to 'Regularly measured'	
	Items	To give example of each measurements	
	Items	Might need to collapse the level of measurement of each items	
Accountability		OK	
Integration		OK	
Purpose		OK	

Notes:

- The questionnaire is to be amended based on the feedbacks given by the respondents.
- Some items are to be re-worded or deleted (need to refer back to the literature).
- Section on 'Human Capital' is to be further improved and simplified.

The Pilot Analysis

Cluster Analysis (K Means Clustering)		
PMS	2 - Cluster Solution	Cluster 1 = 9 cases
		Cluster 2 = 2 cases
		Missing = 3 cases
ANOVA – Comparing Means among clusters		
HC1 & PMS clusters	0.112	Not significant
HC2a & PMS clusters	0.943	Not significant
HC3 & PMS clusters	0.294	Not significant
MS and PMS Clusters	0.004	Highly significant
CG and PMS Clusters	0.626	Not Significant
OC and PMS Clusters	0.415	Not Significant
OS and PMS Clusters	0.000	Highly Significant
IT and PMS Clusters	0.003	Highly Significant
Correlation – Among Variables		
HC3 & CG	-0.604	-ve significantly correlated at 0.05
HC2b & IT	-0.809	-ve significantly correlated at 0.05
MS & OC	+0.731	+ve significantly correlated at 0.05
MS & OS	+0.904	+ve significantly correlated at 0.01
MS & IT	+0.765	+ve significantly correlated at 0.01
OC & OS	+0.709	+ve significantly correlated at 0.05
OS & IT	+0.747	+ve significantly correlated at 0.01

Notes:

- The cluster analysis produced a 2 –Cluster solution on the ‘Level of PMS’ among - service SMEs (14 respondents). This is due to small sample size.

Actual Fieldwork (Mid March to End April 2010)

Sampling Procedure

Population of Service SMEs in Brunei = 4,992

Using:

Margin of error = 5%

Confidence level = 95%

Sample size = **357**

Sample Frame: List provided by Brunei Government Labor Department

Randomly selecting at every **13ⁿ** number of SMEs from the given list

APPENDIX 8. CONSENT FORM FOR PARTICIPANTS TAKING PART IN STUDENT RESEARCH PROJECTS

Faculty of Humanities Consent Form for Participants Taking Part in Student Research Projects

Title of Project:.....
.....
.....
.....
.....

Name of Researcher BLOCK LETTERS:.....
School:.....
.....

Participant (volunteer)

Please read this and if you are happy to proceed, sign below.

The researcher has given me my own copy of the information sheet which I have read and understood. The information sheet explains the nature of the research and what I would be asked to do as a participant. I understand that the research is for a student project and that the confidentiality of the information I provide will be safeguarded unless subject to any legal requirements. S/he has discussed the contents of the information sheet with me and given me the opportunity to ask questions about it.

I agree to take part as a participant in this research and I understand that I am free to withdraw at any time without giving any reason, and without detriment to myself.

Signed:.....
.....

Date:.....

Family Name BLOCK LETTERS:.....
Other Name(s) BLOCK LETTERS:.....

If the participant is under 18 or a vulnerable adult a parent/guardian or other responsible adult must also sign the form:

Signed:.....
.....
Family Name BLOCK LETTERS:.....

Other Name(s) BLOCK

LETTERS.....

Relationship to Participant BLOCK LETTERS

(parent/guardian).....

Date:.....

.....

Researcher

I, the researcher, confirm that I have discussed with the participant the contents of the information sheet.

Signed:.....

.....

Date:.....

APPENDIX 9. APPLICATION FOR ETHICAL APPROVAL

Manchester Business School

Application for Ethical Approval

When completed this form should be returned to the PGR Office.

The form should preferably be typed, where handwritten please use BLOCK CAPITALS.

Surname: HAJI MASRI **Student Number:** 7380247

Forename(s) MASAIROL

Programme: PhD in Business Administration (Business System)

Thesis title: PERFORMANCE MEASUREMENT SYSTEM FOR SME: THE CASE OF BRUNEI DARUSSALAM

The following should be addressed, where applicable, when explaining how you will address any ethical issues arising from your doctoral work. All questions must be answered. 'Not applicable (N/A)' is a satisfactory answer where appropriate.

1. Brief description of the research project.

The research explores the factors that drive and block the implementation of strategic PMS. The research specifically explores the PMS's characteristics of SMEs in the context of Brunei Darussalam. This research primarily focuses on the service sector of the SMEs. An evaluation is undertaken on the drivers and blockers of implementing PMS in SMEs found in the literature. The research uses case study approach of investigating the contingency factors that drive and/or blocked the adoption of performance measurement system in SMEs of the service sector.

2. Does the research involve any of the following?:

	Yes	No
• use of questionnaires designed by the researcher	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• use of standard survey instrument	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• use of on-line surveys	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• use of interviews	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• use of focus groups	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• audio-taping participants or events	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• video-taping participants or events	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• research about participants involved in illegal activities	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• access to personal and/or confidential data without the participant's specific consent	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• administration of any stimuli, tasks, investigations or procedures which may be experienced by participants as physically or mentally painful, stressful or unpleasant during or after the research	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• observation of participants without their knowledge	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Provide a summary of the design and methodology of the project, including the methods of data collection and the methods of data analysis.

Data Collection

The data collection process will be carried out in three main phases. The first phase is an extensive questionnaire process to investigate the current state of development of PMS in Brunei Darussalam.

First Phase of Investigation

Questionnaires will be sent out to the managers of companies that fall under the category of service SMEs as defined by the Brunei Economic Boards.

Second Phase of Investigation

The second phase is an extension of the findings from the questionnaires. An intensive in-depth interview would be conducted with six service SMEs.

Third Phase of Investigation

The third phase of the investigation is through intervention research design. In this phase, I will use action research in order to learn the driver and blockers of strategic PMS adoption by six service SMEs in Brunei Darussalam. The intervention will be initiated through a PMS workshop for the manager/ owner and the project team. The workshop will include an introduction to the developed extended PMS for service SMEs, performance measurement questionnaires and timetabling of the three stages of PMS to be conducted by the organization.

Besides the interview, readily available data can be collected from the SMEs for this research.

Data will also be collected through observation for example in the project team and the management meeting.

Data Analysis

Documentation includes the typing of notes, transcription of tapes, gathering of documents and materials collected during the fieldwork. It also includes the documentation of ideas and insight by the researcher during the fieldwork. In order to increase the accuracy of the documentation, the draft report will be sent to the respondents for verification.

Data that were collected or observed during the field work will need to be coded. Three steps of coding i.e. open-coding, axial coding and selective coding will be observed.

As this research propose to employ longitudinal intervention research, an analysis on the sequence of event within each cases will enable a unique patterns to emerge. Thus, an intensive understanding of the individual SME will help the researcher to understand any differences or similarity found for cross-case analysis.

4. Describe the research procedures as they affect the research participant and any other parties involved.

The first phase i.e. questionnaires will involve service SMEs in Brunei Darussalam. Service SMEs will be approach to fill in the questionnaires.

The second phase i.e. interview six service SMEs. This will only involve the high level managers/officers of the organization. It will be tape-recorded to capture the accuracy of the conversation.

The third phase i.e. intervention phase. This will be initiated through the workshop of PMS to the project team and those at the managerial level of the organization. Data collection will also involve the observation by the researcher during the design, implementation and use stage of the PMS development process. Interviews will be conducted after each stages of the development process.

5. What, in your opinion, are the ethical considerations involved in this research and how will they be addressed? You may wish for example to comment on issues to do with consent, confidentiality, risk to participants etc.

Consent for the organizations to be acquired via formal consent letter/form from the organizations.

6. Will the research specifically target:

	Yes	No
• students or staff of this University	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• adults (over the age of 18 and able to give informed consent)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• children (anyone under the age of 18)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• the elderly	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• people from non-English speaking backgrounds	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• anyone intellectually or mentally impaired who can't provide consent	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• anyone who has a physical disability	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• patients or clients of professionals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• anyone who is a prisoner or parolee	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• any other person whose capacity to give informed consent may be compromised	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please note that you may also need to obtain satisfactory CRB clearance (or equivalent for overseas students).

7. Will payment or any other incentive be made to any research participant? If so please specify and state the level of payment to be made and/or the source of the funds/gift/free service to be used. Please explain the justification for offering payment or other incentive.

N/A

8. Please indicate the method of recruitment by ticking the appropriate box(es). Tick all that apply.

Mail Out	<input type="checkbox"/>	Email	<input type="checkbox"/>	Telephone	<input type="checkbox"/>
Advertisement contacts	<input type="checkbox"/>	Recruitment carried out by third party	<input type="checkbox"/>	Personal	<input checked="" type="checkbox"/>

Recruitment carried details obtained out by researchers sources	<input checked="" type="checkbox"/>	Contact details obtained from public documents	<input checked="" type="checkbox"/>	Contact from private	<input type="checkbox"/>
Participants from a explain) Previous study	<input checked="" type="checkbox"/>	Snowball	<input type="checkbox"/>	Other (please	<input type="checkbox"/>

If using a **mail out** who will be distributing it?
N/A

If using an **advertisement** explain where it will be placed. Have you attached a copy? Y/N - if no please explain

N/A

If recruitment is to be conducted by a **third party** (e.g. friend, contact, doctor) have you attached an approval letter

- requesting their assistance? Y/N - if no please explain
- confirming their willingness to act? Y/N - if no please explain

N/A

If contact details are to be obtained from **private sources** have you attached an approval letter? Y/N - if no please explain.

N/A

9. Please give details of how informed consent is to be obtained. A copy of the proposed consent form, along with the proposed information sheet must accompany this proposal.

Through the organizations official consent letter or the university consent form.

10. Please state who will have access to the data and what measures will be adopted to maintain the confidentiality of the research participant and to comply with data protection requirements e.g. will the data be anonymised?

It will be anonymised.

11. Will the participant be given feedback? If so describe how the feedback will be disseminated.

Interview scripts to be sent to the participants for validation.

12. State location(s) where the project will be carried out.

Brunei Darussalam.

13. Date on which project will begin 01/10/09 and end 30/06/10 (this must not be before the date of Ethics Committee approval)

Signature: MASAIROL

Date: 04/07/2009

Supervisor's Declaration:

I have discussed the above ethical issues with the student in relation to his / her proposed research and agree that the involvement of human participants / human data / material is essential for the proposed research topic.

Supervisors

Name:

....

Supervisor's Signature:

.....

Date:

The following section will be completed after you have submitted the form to Anusarin Lowe in the PGR Programmes Office, room 9.24 Harold Hankins

Director of PGR Programmes:

Action: **Date**

.....

NB: Should you change your research plans you will need to complete another ethics form. Please contact the PGR Ethics Committee should you have any questions.

APPENDIX 10. ETHICAL GUIDELINE

Postgraduate Research: Participant Information Sheet

You are being invited to take part in a research study as part of a student project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

Who will conduct the research?

Insert the name of the researcher(s) and the School address.

Title of the Research

Insert title of the research. If the title is not self-explanatory to a lay person a simplified title should be included.

What is the aim of the research?

Provide an explanation of what you, the researcher, is hoping to achieve by the research

Why have I been chosen?

Provide a statement explaining how the participant was chosen and how many other participants will be involved.

What would I be asked to do if I took part?

Provide an explanation of what is going to be done by you, the researcher and a clear explanation of what the participant is expected to do during the research. Also include an explanation of the risks, pain or discomfort, if any, that the participant may experience.

What happens to the data collected?

Provide a clear explanation as to how the data will be used.

How is confidentiality maintained?

Provide a statement on how you will maintain confidentiality.

What happens if I do not want to take part or if I change my mind?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without detriment to yourself

Will I be paid for participating in the research?

Provide a clear statement of payment arrangements for compensation for the participants time and inconvenience and any out-of-pocket expenses, if applicable.

What is the duration of the research?

Provide details on the duration of the study (e.g. 3x ½ hour interviews; 1 questionnaire etc)

Where will the research be conducted?

Provide details of the location.

Will the outcomes of the research be published?

Provide details of anticipated outcomes in respect of publication of findings.

Criminal Records Check (if applicable)

Provide a statement declaring that the researcher who may have access to children or vulnerable adults has undergone a satisfactory criminal records check.

Contact for further information

Insert details here

APPENDIX 11. INFORMATION SHEET IN CONDUCTING RESEARCH THAT INVOLVE HUMAN PARTICIPANTS

Ethical Approval for Research Involving Human Participants: Guidelines for postgraduate research students

In carrying out their work researchers inevitably face ethical dilemmas which arise out of competing obligations and conflicts of interest. All research proposals involving data collection involving human participants normally requires prior ethical approval to ensure the safety, rights, dignity and well-being of the participant and those of the researcher. This is why you are required to declare whether or not this applies to your thesis topic and, if so, how these ethical issues are to be addressed. In doing so, you are providing assurance that you have read the guidelines and considered whether your proposed doctoral research raises ethical issues which require the attention of the School's PGR Ethics committee and /or the University's Senate Committee on the Ethics of Research on Human Beings.

Ethical approval should not be considered as a bureaucratic obstacle; it is a mechanism for ensuring and demonstrating that the design of your research respects the rights of those who are the participants of the research.

Who does this apply to?

All postgraduate research students (researchers) must secure ethical approval for any research they conduct involving human participants or human data or material before undertaking their research.

Examples of activities for which approval is required include questionnaire and interview based research involving sensitive or confidential issues, telephone interviewing or recording by audio or video tape and contact with participants who are children or considered as potentially vulnerable adults.

How do I obtain Ethical approval?

Application for ethical approval must be made via the MBS PGR ethics committee.

Where you will be conducting research involving NHS patients or staff, or working on NHS premises approval must be sought via an NHS Research Ethics Committee. The relevant form can be obtained from the COREC (Central Office for Research Ethics Committee) website: <http://www.corecform.org.uk>

What happens if I have not applied for or obtained ethical approval?

Failure to follow the School's procedure for ethical approval may leave you and the University open to legal action without the protection of an insurance policy and may result in disciplinary action.

What research does it cover?

All research involving human participants or human data or material must have ethical approval. Research where the information about human participants is publicly and lawfully available e.g. information published in the census, population statistics published by the government, personal letters and diaries etc held in public libraries do not require ethical approval.

Working with children

- You must satisfy yourself that the research you propose to undertake is worthwhile and that the techniques proposed are appropriate.
- You must satisfy yourself that there is a need to involve children and be able to justify this to the committee(s).
- You should ensure that you have familiarised yourself with and comply with the relevant legal position where it is intended to conduct research with children.
- Where your research involves children every effort should be made to gain informed consent from the child and his / her parents (or legal equivalent)
- In certain cases research that involves vulnerable people may require Criminal Records Bureau (CRB) Disclosures. The CRB offers a means to check the background of researchers to ensure that they do not have a history that would make them unsuitable for work involving children.

Working with potentially vulnerable adults

- You must satisfy yourself that the research you propose to undertake is worthwhile and that the techniques proposed are appropriate.
- You must satisfy yourself that there is a need to involve potentially vulnerable adults, e.g. older persons or those with severe learning difficulties and be able to justify this to the committee(s).
- You should ensure that you have familiarised yourself with and comply with the relevant legal position where it is intended to conduct research with potentially vulnerable adults.
- In cases where your research involves vulnerable adults every effort should be made to secure their informed consent. However, in cases where this seems impossible or where the participants are considered not competent to give their consent to the research the issue of honesty and consent may need to be managed via proxies, who should either be those with a duty of care or who can provide disinterested independent approval.
- In certain cases research that involves vulnerable people may require Criminal Records Bureau (CRB) Disclosures. The CRB offers a means to check the background of researchers to ensure that they do not have a history that would make them unsuitable for work involving vulnerable adults.

Recruiting Participants

Participants should enter into the research freely and willingly and know and understand what they are agreeing to when they take part.

- No one should be made to participate in a research study against their will.
- Those recruiting participants should ensure that no undue influence is exerted in order to persuade the participant to take part in the research.
- Participants should be made aware that participation is entirely voluntary; that refusal will attract no sanction, and that they will not be required to give reasons for refusal; that if they agree to participate in the study, they are free to leave the study at any time without being required to give reasons for leaving.
- Wherever possible anonymity and confidentiality should be maintained.
- It is inappropriate to offer volunteers excessive payments which might induce them to participate in a study against their better judgement. Small payments

may be made in order to compensate participants for their time and inconvenience. Out-of-pocket expenses may also be met.

There are a variety of ways for recruiting participants:

- mail out
- email
- telephone
- advertisement
- recruitment carried out by third party (e.g. employer, doctor)
- recruitment carried out by researchers
- contact details obtained from public documents (e.g. phone book)
- contact details obtained from private sources (e.g. employee list, membership database)
- participants from a previous study
- snowball (participants suggest other potential participants)
- personal contacts

Information Sheet & Consent Form

Informed consent entails giving as much information as possible about the potential research so that the prospective participants can make an informed decision about their possible involvement. Normally this information should be supplied in written form (information sheet) and signed off (consent form) by the research participant(s).

The primary objective is to conduct research openly and without deception.

- Written information should be supplied to participants making clear that the research is for a student project. It should be written in terms that an ordinary person rather than a specialist in the field can understand i.e. avoid technical jargon. The information provided should be accurate and concise, specific to the proposed research and appropriate for the social and cultural context in which it is being given.
- You must take time over this as it is essential to explain what you are asking participants to do and the possible implications so that they can make an informed decision whether they wish to take part.
- You should consider whether the participant will be able to read the information you provide and consider how to deal with problems of illiteracy or where the participant is not fluent in the language used.

The information sheet should include the following:

1. the name of the researcher(s)
2. an explanation of what you, the researcher, is hoping to achieve by the research
3. what is going to be done by you, the researcher
4. an explanation of the risks, pain or discomfort, if any, that the participant may experience
5. a clear explanation of what the participant is expected to do during the study
6. a statement that the participant is not obliged to take part, and may withdraw at any time
7. a clear statement of payment arrangements for compensation for the participants time and inconvenience and any out-of-pocket expenses
8. consent statement (this can be separate to the information sheet)

Other information can also be included such as:

- a. duration of the study
- b. location of the study
- c. anticipated outcomes in respect of publication of findings

Having understood the above the participant gives their consent to take part in the study by signing a consent form and is given a copy of both the information sheet and the consent form to keep. Sufficient time must be provided between the request to take part and the signing of the consent form, in order to ensure that the participant has read the information sheet and had the opportunity to ask questions about the research.

- You should be willing to answer any questions put to you by (potential) participants.
- Participants should understand how far they will be afforded anonymity and confidentiality and should be able to reject the use of data-gathering devices such as tape recorders and video cameras.
- You should inform the participant of their rights under any copyright or data protection laws. Where your research is recorded using audio or video recordings you should obtain the appropriate copyright clearances where necessary.
- You have a responsibility to ensure that the physical, social and psychological well-being of the participant is not adversely affected by the research.
- You should clarify whether, and if so, the extent to which the participants are allowed to see transcripts of interviews and notes and to alter the content, to withdraw statements, to provide additional information or to add glosses on interpretations.
- Clarification should also be given to participants regarding the degree to which they will be consulted prior to publication. Where possible, participants should be offered feedback on findings, for example in the form of a summary report.
- It is important that participants should not be offered payments in order to persuade them to take part in any research in which they would not ordinarily take part, although reasonable compensation for time and inconvenience and expenses incurred may be made.
- You should take all reasonable steps to ensure that no harm occurs to participants by virtue of their participation in the study.
- Consent is only valid for procedures set out on the information sheet. Should any of the information included on that sheet change during the course of the study, new consent should be sought; participants are free to refuse consent and withdraw from the study if they wish.
- Under certain survey conditions a signed consent form may not be needed e.g. when adult participants are mailed a questionnaire, return of the questionnaire can be considered to indicate consent. However the researcher must provide proof that the participants will be adequately informed of the purpose of the study, the extent of the participant's involvement and how the data will be handled with respect to confidentiality. In the case of a postal survey a copy of an abbreviated information sheet or cover letter should be submitted with the application for ethical approval.

Obligations on researchers

- It is expected that, in addition to the above, you will abide by any guidelines issued by professional bodies to which you belong or which govern research in your area. Where such guidelines conflict with the above, the advice of the PGR ethics Committee should be sought.
- Researchers should never present others' work as their own. Nor should they knowingly misrepresent the findings of their research or the work of others
- Any study should be stopped immediately on request or if the participant shows any sign of distress and should not recommence without the agreement of the participant (or his/her parent or person acting in loco parentis)
- Should you need to use participants for your research obtained via an NHS source, ethical approval must be sought from the Central Office for Research Ethics Committee (<http://www.corec.org.uk>)

Confidentiality of information obtained during research

The confidentiality of information supplied by research participants and the anonymity of respondents must be respected.

- You should not give unrealistic guarantees of confidentiality and anonymity, where given such guarantees must be honoured, unless there are clear and overriding reasons to do otherwise, for example in relation to the abuse of children. You should be aware that legal challenge may preclude the honouring of such a guarantee. Passing on confidential information without the express permission of the participant should not be undertaken lightly and legal and professional advice should be sought immediately if this is contemplated.
- Appropriate measures should be taken to store research data in a secure manner. You should be aware of your obligations under the Data Protection Act. Where appropriate and practicable, methods for preserving anonymity should be used including the removal of identifiers, the use of pseudonyms and other technical means for breaking the link between data and identifiable individuals.
- Data and results obtained from the research should only be used in the way(s) for which consent has been given. Informed consent is the most important part of the Data Protection rules for researchers.

What happens if I want to publish the research?

- You must tell the proposed participant in advance if you have any intention of publishing the results of the study.
- You must explain the extent to which, if at all, any identifying information about the participant will appear in the publication.
- If identifying information about the participant is intended to be published you must obtain and keep specific written agreement from the participant.
- Preferably these issues should be addressed on the initial information sheet that is issued before participant gives their consent.

Informing research participants of results of research

It is appropriate for research participants to be able to receive feedback on research they have been involved in, where this is possible. You should consider the issue of informing the participants of the results of the research or where they may be able to

get access to this information (although participants may not be able to be given their individual results).

Whilst these guidelines are not exhaustive, they indicate a set of obligations to which researchers should normally adhere. Responsibility for both interpretation and compliance rests with the researcher. Further sources of information.

Source of information / act	URL
Economic and Research Council (ESRC)	http://www.esrc.ac.uk
Arts, Humanities Research Council (AHRC)	http://www.ahrb.ac.uk
British Sociological Association	http://www.britsoc.co.uk
Association of Social Anthropologists	http://www.theasa.org/
Political Studies Association	http://www.psa.ac.uk/
Criminal Records Bureau (CRB)	http://www.crb.gov.uk
Central Office for Research Ethics Committee – COREC (NHS)	http://www.corec.org.uk
The Human Rights Act (1988)	http://www.opsi.gov.uk/acts/acts1998/ukpga_19980042_en_1
Data Protection Act (1988)	http://www.opsi.gov.uk/ACTS/acts1998/19980029.htm http://www.informationcommissioner.gov.uk/
UK Copyright Act (1988)	http://www.opsi.gov.uk/acts/acts1988/Ukpga_19880048_en_1.htm
Race relations (Amendment) Act 2003	http://www.opsi.gov.uk/si/si2003/20031626.htm
Disability Discrimination Act (1995)	http://www.opsi.gov.uk/acts/acts1995/1995050.htm
Freedom of Information Act (2000)	http://www.opsi.gov.uk/ACTS/acts2000/20000036.htm http://www.ico.gov.uk/
Communications Act (2003)	http://www.opsi.gov.uk/acts/acts2003/20030021.htm
University's data protection policy	www.campus.manchester.ac.uk/recordsmanagement/dataprotection/
University of Manchester Code of Practice for Dealing with Allegations of Misconduct in Research Disability Discrimination Act Policy Equality & Diversity Policy Freedom of Information Act Policy Health & Safety Policy Harassment, Discrimination &	http://www.campus.manchester.ac.uk/staffnet/policies/

Bullying Policy	
Intellectual Property Policy (guidance on) Plagiarism and other forms of academic malpractice	

School contact: Alison Gould, PGR Programmes Manager (Email alison.gould@mbs.ac.uk)

University Contact: Dr Timothy Stibbs, Secretary to the Senate Committee on the Ethics of Research on Human Beings (Email: timothy.stibbs@manchester.ac.uk)

Glossary of Definitions:

Consent – the voluntary agreement of a person or group, based on adequate knowledge and understanding of relevant material, to participate in research. Informed consent is one possible result of the informed choice process, the other possible result is refusal.

Confidentiality – the obligations of persons to whom private information has been given is not to use the information for any purpose other than that for which it is given.

Deception – this occurs when research participants have essential information withheld and / or initially misled about procedures and purposes, including studies where participants are deliberately given misleading info about the purposes of the study.

Ethics – the study of morals and values; that is, the study of right & wrong, justice and injustice, virtue and vice, good and bad and related concepts and principles.

Ethical / Unethical – right or morally acceptable / wrong or morally unacceptable.

Harm – that which adversely affects the interests or welfare of an individual or a group

Research – this involves systematic investigation to establish facts, principles and knowledge.

Research participant – living individual (or group of living individuals) about whom a researcher conducting research obtains data through intervention or interaction with the person or identifiable private information.

Risk – the function of the magnitude of a harm and the probability of its occurrence

Voluntary – free of coercion, duress or undue inducement.

APPENDIX 12 COMPARISON OF MEANS: ALL VALUES AND LISTWISE

Items	Group 1 (All Values)		Missing data		Group 2 (Listwise)		Mean Difference
	N	Mean	Count	Percent	N	Mean	
PMAa	62	3.8548	0	0	44	3.8636	-0.0088
PMBa	62	3.7581	0	0	44	3.6818	0.0763
PMCa	62	4.1935	0	0	44	4.2273	-0.0338
PMDa	61	3.9016	1	1.6	44	3.8864	0.0152
PMEa	62	3.6613	0	0	44	3.6136	0.0477
PMFa	62	4.0161	0	0	44	3.9545	0.0616
PMBBa	61	3.7377	1	1.6	44	3.5909	0.1468
PMBBb	62	3.5000	0	0	44	3.4318	0.0682
PMBBc	61	3.8361	1	1.6	44	3.8409	-0.0048
PMBBd	62	3.5645	0	0	44	3.5909	-0.0264
PMBBe	62	3.8226	0	0	44	3.8182	0.0044
PMBBf	61	3.5574	1	1.6	44	3.4773	0.0801
PMBBg	61	3.5246	1	1.6	44	3.5227	0.0019
PMBBh	61	3.9836	1	1.6	44	4.0000	-0.0164
PMBBi	61	4.0164	1	1.6	44	4.0000	0.0164
PMBBj	62	3.6129	0	0	44	3.4773	0.1356
PMBBk	62	3.6452	0	0	44	3.5000	0.1452
PMBBl	62	3.6129	0	0	44	3.5682	0.0447
PMBBm	62	3.9032	0	0	44	3.7727	0.1305
PMBBn	62	3.6452	0	0	44	3.5909	0.0543
PMBBo	62	3.6290	0	0	44	3.6364	-0.0074
PMBBp	62	3.6613	0	0	44	3.6818	-0.0205
PMBPa	61	3.7541	1	1.6	44	3.6818	0.0723
PMBPb	62	4.0323	0	0	44	3.9773	0.0550
PMBPc	61	4.0820	1	1.6	44	3.9545	0.1275
PMBPd	62	4.2097	0	0	44	4.2045	0.0052
PMBPe	61	3.9180	1	1.6	44	3.8864	0.0316
PMBPf	60	3.8000	2	3.2	44	3.7995	0.0005
PMBPg	62	3.7903	0	0	44	3.7045	0.0858
PMBPh	61	4.2951	1	1.6	44	4.2727	0.0224
PMBPi	62	4.3710	0	0	44	4.3182	0.0528
PMBPj	62	4.0161	0	0	44	3.9773	0.0388
PMBPk	62	3.9677	0	0	44	3.9091	0.0586
PMBPl	60	3.1167	2	3.2	44	3.1364	-0.0197
PMBPm	62	4.0968	0	0	44	4.0682	0.0286
PMAAa	62	3.5968	0	0	44	3.5455	0.0513
PMAAb	61	3.3770	1	1.6	44	3.3864	-0.0094
PMAAc	61	3.3934	1	1.6	44	3.5000	-0.1066
PMAAd	60	3.4667	2	3.2	44	3.5000	-0.0333
PMAAe	61	3.4918	1	1.6	44	3.4773	0.0145
PMAAf	61	3.4918	1	1.6	44	3.6136	-0.1218
PMAAg	62	3.7581	0	0	44	3.7727	-0.0146
PMAAh	62	3.6774	0	0	44	3.7273	-0.0499
PMAAi	62	3.1774	0	0	44	3.1364	0.0410
PMAAj	61	3.4262	1	1.6	44	3.4091	0.0171
PMFLa	62	3.7419	0	0	44	3.7273	0.0146
PMFLb	62	3.6613	0	0	44	3.6591	0.0022
PMFLc	62	3.6935	0	0	44	3.6818	0.0117
PMFLd	62	3.8065	0	0	44	3.7955	0.0110
PMFLe	61	3.3607	1	1.6	44	3.2727	0.0880
PMFla	61	3.4262	1	1.6	44	3.4545	-0.0283
PMFlb	61	3.4590	1	1.6	44	3.5227	-0.0637

PMIc	62	3.6935	0	0	44	3.7727	-0.0792
PMId	61	3.2623	1	1.6	44	3.3864	-0.1241
PMIe	62	3.3387	0	0	44	3.3636	-0.0249
PMIf	61	3.4262	1	1.6	44	3.5227	-0.0965
PMIg	62	3.3065	0	0	44	3.3409	-0.0344
CGSIa	61	4.0000	1	1.6	44	3.7907	0.2093
CGSIb	61	3.9508	1	1.6	44	3.7907	0.1601
CGSIc	61	3.9016	1	1.6	44	3.7209	0.1807
CGSI d	60	3.8333	2	3.2	44	3.6977	0.1356
CGSIe	61	3.8525	1	1.6	44	3.6512	0.2013
CGOIa	61	4.1967	1	1.6	44	3.9767	0.2200
CGOIb	61	3.9344	1	1.6	44	3.6279	0.3065
CGOlc	61	3.9180	1	1.6	44	3.6744	0.2436
CGOld	61	4.0164	1	1.6	44	3.7647	0.2517
CGOle	61	4.0820	1	1.6	44	3.9070	0.1750
CGOlf	61	4.0164	1	1.6	44	3.8372	0.1792
MSa	61	4.2459	1	1.6	44	4.1163	0.1296
MSb	62	4.0000	0	0	44	3.8605	0.1395
MSc	62	3.7903	0	0	44	3.7442	0.0461
MSd	62	4.1129	0	0	44	4.4650	-0.3521
MSe	62	4.2903	0	0	44	4.2326	0.0577
MSf	62	4.0645	0	0	44	4.0000	0.0645
MSg	62	4.2258	0	0	44	4.1163	0.1095
MS h	62	4.2258	0	0	44	4.1860	0.0398
MSi	60	3.6667	2	3.2	44	3.6512	0.0155
HCSAa	61	2.3607	1	1.6	44	2.3488	0.0119
HCSAb	61	2.4754	1	1.6	44	2.3953	0.0801
HCSAc	61	2.9016	1	1.6	44	2.8140	0.0876
HCSAd	61	2.5082	1	1.6	44	2.5116	-0.0034
HCTa	59	2.3051	3	4.8	44	2.4419	-0.1368
HCTb	59	2.5763	3	4.8	44	2.6279	-0.0516
HCTc	59	2.7288	3	4.8	44	2.8140	-0.0852
HCTe	59	2.4746	3	4.8	44	2.5116	-0.0370
OCi1	62	4.1452	0	0	44	4.1395	0.0057
OCk1	62	4.4194	0	0	44	4.3256	0.0938
OCI1	61	4.3770	1	1.6	44	4.3721	0.0049
OCm1	62	4.0645	0	0	44	4.9300	-0.8655
OCn1	62	4.2581	0	0	44	4.2326	0.0255
OC o1	62	4.2742	0	0	44	4.3023	-0.0281
OCp1	62	4.2419	0	0	44	4.2791	-0.0372
OCq1	62	4.3065	0	0	44	4.2791	0.0274
OCr1	61	4.2131	1	1.6	44	4.1395	0.0736
OCs1	62	4.4194	0	0	44	4.3953	0.0241
OCt1	61	4.0492	1	1.6	44	4.0930	-0.0438
OCu1	61	4.2623	1	1.6	44	4.3023	-0.0400
OCv1	61	4.1475	1	1.6	44	4.1163	0.0312
OCw1	60	4.2167	2	3.2	44	4.2558	-0.0391
OCb2	62	4.0161	0	0	44	3.9302	0.0859
OCe2	62	4.2419	0	0	44	4.1860	0.0559
OCf2	61	3.9836	1	1.6	44	4.0233	-0.0397
OCg2	62	4.2419	0	0	44	4.2558	-0.0139
OCh2	61	3.9344	1	1.6	44	4.0233	-0.0889
OCz2	62	4.0968	0	0	44	4.0465	0.0503
OCc3	61	3.4098	1	1.6	44	3.4186	-0.0088
OCd3	62	3.3710	0	0	44	3.3721	-0.0011
OCx3	62	3.5968	0	0	44	3.5581	0.0387
OCy3	62	4.0806	0	0	44	3.9767	0.1039
OCa	61	3.8197	1	1.6	44	3.6977	0.1220

OCj	59	2.4237	3	4.8	44	2.4186	0.0051
OSBSa1	61	3.8033	1	1.6	44	3.7209	0.0824
OSBSf1	62	4.2581	0	0	44	4.2326	0.0255
OSBSg1	62	4.1290	0	0	44	4.0930	0.0360
OSBSH1	61	4.1148	1	1.6	44	4.0698	0.0450
OSBSj1	62	3.8710	0	0	44	3.7907	0.0803
OSBSk1	62	3.8387	0	0	44	3.7674	0.0713
OSBSl1	62	3.8871	0	0	44	3.7907	0.0964
OSBSm1	62	3.8548	0	0	44	3.8140	0.0408
OSBSq1	62	3.3226	0	0	44	3.2791	0.0435
OSBST1	60	3.9167	2	3.2	44	3.9070	0.0097
OSBSb2	62	4.6129	0	0	44	4.5349	0.0780
OSBSc2	62	4.3548	0	0	44	4.3488	0.0060
OSBSd2	62	4.5484	0	0	44	4.5349	0.0135
OSBSe2	62	4.4194	0	0	44	4.3488	0.0706
OSBSi2	62	4.0968	0	0	44	4.0930	0.0038
OSBSn3	61	3.3443	1	1.6	44	3.3256	0.0187
OSBSo3	62	4.0161	0	0	44	3.9302	0.0859
OSBSp3	62	3.6452	0	0	44	3.6279	0.0173
OSBSr3	62	4.2742	0	0	44	4.1395	0.1347
OSBSs3	61	3.8197	1	1.6	44	3.7674	0.0523
ITUa	60	4.0500	2	3.2	44	4.0233	0.0267
ITUb	61	4.0492	1	1.6	44	4.0233	0.0259
ITUc	61	4.1148	1	1.6	44	4.0930	0.0218
ITUd	61	4.0000	1	1.6	44	4.0465	-0.0465
ITUe	60	4.0000	2	3.2	44	3.9767	0.0233
ITUf	61	3.9180	1	1.6	44	3.8837	0.0343
ITUg	61	3.9344	1	1.6	44	3.8837	0.0507
ITUh	61	3.9508	1	1.6	44	3.9535	-0.0027
ITCa	59	3.9492	3	4.8	44	3.9302	0.0190
ITCb	61	4.0492	1	1.6	44	4.0000	0.0492
ITCc	60	3.7833	2	3.2	44	3.8372	-0.0539
ITCd	60	3.6500	2	3.2	44	3.7209	-0.0709
ITCe	59	3.7458	3	4.8	44	3.7674	-0.0216
ITla	60	3.7167	2	3.2	44	3.6977	0.0190
ITlb	60	3.4000	2	3.2	44	3.4419	-0.0419
ITlc	60	3.5333	2	3.2	44	3.4884	0.0449
ITld	59	2.9831	3	4.8	44	3.0000	-0.0169
ITle	60	3.3833	2	3.2	44	3.4419	-0.0586
ITlf	60	3.4333	2	3.2	44	3.4186	0.0147

Note: No T-test is conducted as there are no variables with 5 percent or more missing values.

APPENDIX 13. PRINCIPAL COMPONENT ANALYSIS (SELECTED VARIABLES)

Performance Measures

KMO and Bartlett's Test : Performance Measures

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	210.324
	df	15
	Sig.	.000

Eigenvalues associated with each linear component before and after extraction

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.993	66.543	66.543	3.993	66.543	66.543
2	.730	12.159	78.702			
3	.438	7.304	86.006			
4	.373	6.215	92.221			
5	.271	4.520	96.740			
6	.196	3.260	100.000			

Extraction Method: Principal Component Analysis.

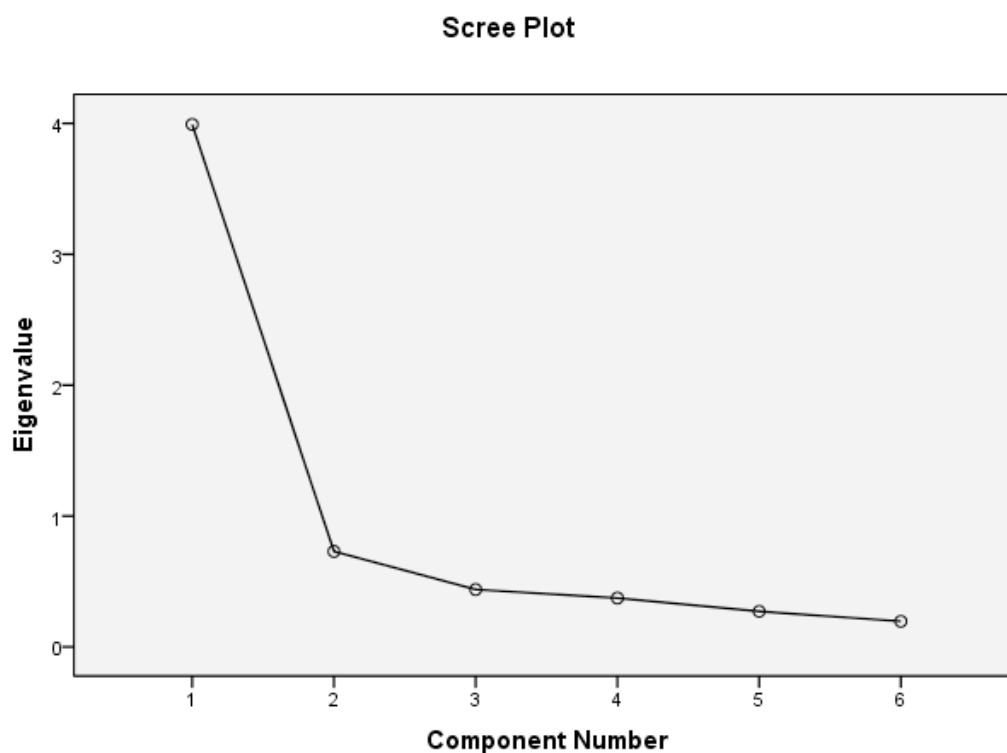
Communalities – Performance Measures

Component Matrix^a

	Component
	1
Financial performance - Unit	.758
Competitiveness	.847
Quality	.810
Flexibility	.881
Utilization	.876
Innovation	.708

Extraction Method: Principal Component Analysis.

a. 1 components extracted.



Organizational Culture

KMO and Barlett's Test : Organizational Culture

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	1352.762
	df	325
	Sig.	.000

Eigenvalues associated with each linear component before and after extraction

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Loadings			Loadings			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.873	53.357	53.357	13.873	53.357	53.357	8.109	31.190	31.190
2	2.168	8.337	61.694	2.168	8.337	61.694	5.280	20.307	51.496
3	1.350	5.193	66.887	1.350	5.193	66.887	3.415	13.136	64.632
4	1.220	4.691	71.578	1.220	4.691	71.578	1.806	6.946	71.578
5	.997	3.833	75.411						

6	.937	3.605	79.016					
7	.801	3.082	82.098					
8	.664	2.555	84.653					
9	.514	1.975	86.628					
10	.482	1.854	88.482					
11	.438	1.684	90.166					
12	.396	1.523	91.688					
13	.318	1.222	92.910					
14	.295	1.136	94.046					
15	.248	.953	94.999					
16	.225	.865	95.864					
17	.204	.785	96.650					
18	.181	.696	97.346					
19	.155	.595	97.941					
20	.121	.465	98.406					
21	.110	.421	98.827					
22	.094	.363	99.190					
23	.076	.290	99.481					
24	.066	.253	99.734					
25	.038	.148	99.882					
26	.031	.118	100.000					

Extraction Method: Principal Component

Analysis.

Varimax Rotation of 4 factors solution for organizational culture

Rotated Component Matrix^a

	Component			
	1	2	3	4
Innovative	.196	.391	.333	.557
Opportunities	.394	.414	.232	.343
Experimenting	.190	.208	.788	.124
Risk taking	.074	.186	.732	.328
Careful	.484	.681	.070	.191
Rule oriented	.280	.792	.297	-.005
Stability	.384	.778	.229	-.019
Predictability	.305	.771	.266	-.071
Security of employment	.600	.569	.259	.082
No rules	-.053	-.112	.194	.686
Respect for individuals	.546	.468	.080	.528
Fairness	.711	.431	.090	.348
Tolerance	.779	.210	-.139	.131
Achievement oriented	.716	.415	.127	.095
Action oriented	.811	.289	.205	-.035

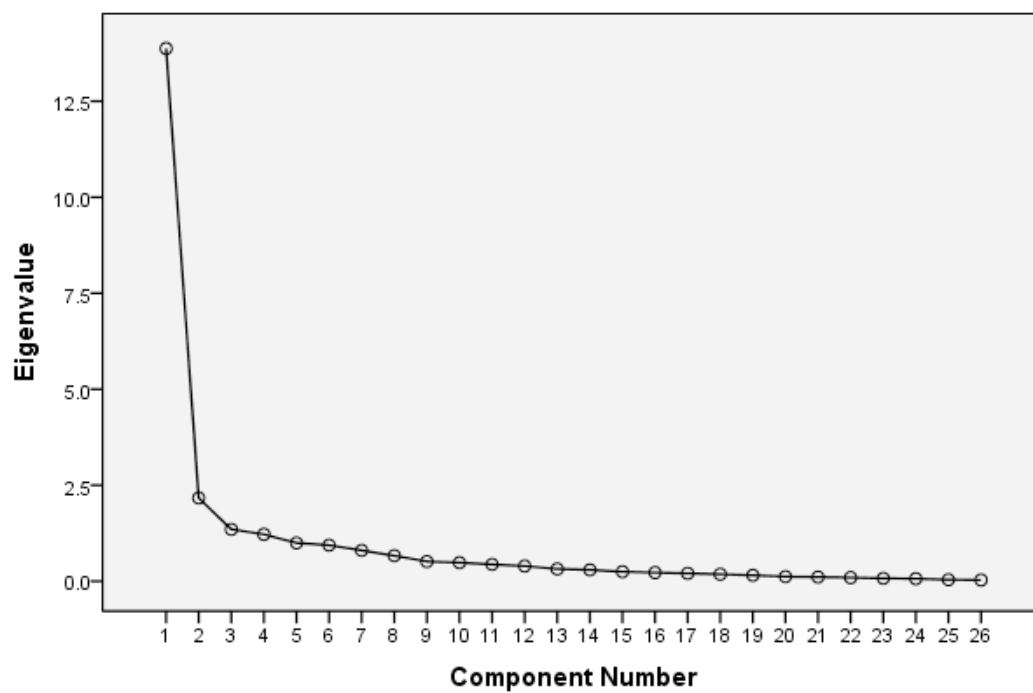
Hig expectations	.682	.320	.308	.157
Results oriented	.777	.370	.214	.070
Precise	.651	.462	.221	.071
Attention to detail	.667	.513	.089	.176
Analytical	.553	.372	.410	-.318
Team oriented	.862	.160	.240	-.040
Collaboration	.814	.185	.268	-.120
People oriented	.703	.220	.338	.211
Aggresive	.210	.112	.770	.125
Competitive	.228	.493	.659	.037
Sociall responsible	.369	.573	.212	.255

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Scree Plot



APPENDIX 14. ANOVA ANALYSIS AND DESCRIPTIVE STATISTICS FOR THE THREE CLUSTER GROUP

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AvgCGSI	Between Groups	33.249	2	16.624	21.941	.000
	Within Groups	43.189	57	.758		
	Total	76.437	59			
AvgCGOI	Between Groups	12.407	2	6.203	6.332	.003
	Within Groups	56.825	58	.980		
	Total	69.232	60			
AvgMSFlex	Between Groups	12.805	2	6.403	14.299	.000
	Within Groups	25.971	58	.448		
	Total	38.776	60			
AvgMSRules	Between Groups	7.606	2	3.803	8.683	.000
	Within Groups	25.842	59	.438		
	Total	33.449	61			
AvgOCTeamandRespectforPeople	Between Groups	7.013	2	3.506	8.882	.000
	Within Groups	21.712	55	.395		
	Total	28.725	57			
AvgRuleOrientation	Between Groups	14.010	2	7.005	16.068	.000
	Within Groups	24.849	57	.436		
	Total	38.859	59			
AvgCompetitiveandAggressive	Between Groups	20.047	2	10.023	17.156	.000
	Within Groups	33.886	58	.584		
	Total	53.932	60			
AvgOSCostandMarketLeadership	Between Groups	11.416	2	5.708	12.579	.000
	Within Groups	24.959	55	.454		
	Total	36.375	57			
AvgOSCustomerServiceOrientation	Between Groups	5.829	2	2.915	8.201	.001
	Within Groups	20.968	59	.355		
	Total	26.797	61			
AvgOSFocusProductDifferentiation	Between Groups	16.146	2	8.073	16.130	.000
	Within Groups	28.528	57	.500		
	Total	44.674	59			
AvgITU	Between Groups	7.997	2	3.999	5.756	.005
	Within Groups	38.900	56	.695		
	Total	46.897	58			
AvgITC	Between Groups	16.595	2	8.298	13.367	.000

	Within Groups	32.278	52	.621		
	Total	48.873	54			
AvgITI	Between Groups	12.691	2	6.346	11.468	.000
	Within Groups	30.987	56	.553		
	Total	43.678	58			
AvgHCSA	Between Groups	16.819	2	8.409	9.977	.000
	Within Groups	48.888	58	.843		
	Total	65.707	60			
AvgHCMT	Between Groups	15.607	2	7.803	10.662	.000
	Within Groups	39.522	54	.732		
	Total	55.128	56			

Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AvgCGSI								
1	15	4.8133	.38889	.10041	4.5980	5.0287	3.60	5.00
2	10	2.4600	1.36317	.43107	1.4848	3.4352	1.00	5.00
3	35	3.9086	.84623	.14304	3.6179	4.1993	2.00	5.00
Total	60	3.8933	1.13822	.14694	3.5993	4.1874	1.00	5.00
AvgCGOI								
1	16	4.7188	.37869	.09467	4.5170	4.9205	3.67	5.00
2	10	3.3833	1.66119	.52532	2.1950	4.5717	1.00	5.00
3	35	3.8952	.93680	.15835	3.5734	4.2170	1.00	5.00
Total	61	4.0273	1.07418	.13754	3.7522	4.3024	1.00	5.00
AvgMSFlex								
1	16	4.5417	.48496	.12124	4.2833	4.8001	3.67	5.00
2	10	3.1000	1.13366	.35849	2.2890	3.9110	1.00	4.67
3	35	4.0190	.56559	.09560	3.8248	4.2133	3.00	5.00
Total	61	4.0055	.80391	.10293	3.7996	4.2114	1.00	5.00
AvgMSRules								
1	16	4.7344	.42297	.10574	4.5090	4.9598	4.00	5.00
2	10	3.7250	1.06360	.33634	2.9641	4.4859	1.00	5.00
3	36	4.0486	.60892	.10149	3.8426	4.2546	2.25	5.00
Total	62	4.1734	.74050	.09404	3.9853	4.3614	1.00	5.00
AvgOCTeamandRespectfor People								
1	15	4.6476	.39904	.10303	4.4266	4.8686	4.00	5.00
2	9	3.5317	1.09621	.36540	2.6891	4.3744	1.00	4.43
3	34	4.2542	.54687	.09379	4.0634	4.4450	2.79	5.00
Total	58	4.2438	.70989	.09321	4.0572	4.4305	1.00	5.00
AvgRuleOrientation	1	4.5521	.47030	.11757	4.3015	4.8027	3.33	5.00

	2	10	3.0667	1.14180	.36107	2.2499	3.8835	1.00	4.17
	3	34	4.1520	.54490	.09345	3.9618	4.3421	3.33	5.00
	Total	60	4.0778	.81156	.10477	3.8681	4.2874	1.00	5.00
AvgCompetitiveandAggressive	1	16	4.2500	.67700	.16925	3.8893	4.6107	2.75	5.00
	2	10	2.4500	1.12916	.35707	1.6422	3.2578	1.00	3.75
	3	35	3.6429	.67597	.11426	3.4107	3.8751	1.75	4.75
	Total	61	3.6066	.94809	.12139	3.3637	3.8494	1.00	5.00
AvgOSCostandMarketLeadership	1	16	4.4188	.63479	.15870	4.0805	4.7570	2.30	5.00
	2	9	3.0111	1.13076	.37692	2.1419	3.8803	1.00	4.10
	3	33	3.9273	.52098	.09069	3.7425	4.1120	2.60	4.80
	Total	58	3.9207	.79885	.10489	3.7106	4.1307	1.00	5.00
AvgOSCustomerServiceOrientation	1	16	4.7500	.34641	.08660	4.5654	4.9346	3.80	5.00
	2	10	3.7800	1.12527	.35584	2.9750	4.5850	1.00	4.80
	3	36	4.4278	.47124	.07854	4.2683	4.5872	3.00	5.00
	Total	62	4.4065	.66280	.08418	4.2381	4.5748	1.00	5.00
AvgOSFocusProductDifferentiation	1	15	4.4800	.36878	.09522	4.2758	4.6842	3.80	5.00
	2	10	2.8400	1.21399	.38390	1.9716	3.7084	1.00	4.20
	3	35	3.8000	.62685	.10596	3.5847	4.0153	2.20	5.00
	Total	60	3.8100	.87016	.11234	3.5852	4.0348	1.00	5.00
AvgITU	1	15	4.1333	.85626	.22109	3.6592	4.6075	2.13	5.00
	2	10	3.2000	.98988	.31303	2.4919	3.9081	1.00	4.75
	3	34	4.1985	.77491	.13290	3.9281	4.4689	2.00	5.00
	Total	59	4.0127	.89920	.11707	3.7784	4.2470	1.00	5.00
AvgITC	1	14	4.3265	.67340	.17997	3.9377	4.7153	3.14	5.00

	2		9	2.6032	1.00452	.33484	1.8310	3.3753	1.00	3.86
	3		32	3.8080	.76855	.13586	3.5309	4.0851	2.00	5.00
	Total		55	3.7429	.95135	.12828	3.4857	4.0000	1.00	5.00
AvgITI	1		14	4.1250	.66325	.17726	3.7420	4.5080	2.75	5.00
	2		10	2.6500	.86763	.27437	2.0293	3.2707	1.00	3.75
	3		35	3.5143	.73750	.12466	3.2609	3.7676	1.50	5.00
	Total		59	3.5127	.86780	.11298	3.2866	3.7389	1.00	5.00
AvgHCSA	1		16	3.2031	.84271	.21068	2.7541	3.6522	1.50	5.00
	2		10	1.5500	.73409	.23214	1.0249	2.0751	1.00	3.25
	3		35	2.5571	.99093	.16750	2.2167	2.8975	1.00	4.75
	Total		61	2.5615	1.04648	.13399	2.2935	2.8295	1.00	5.00
AvgHCMT	1		14	3.0714	.92356	.24683	2.5382	3.6047	1.20	4.80
	2		10	1.4600	.52536	.16613	1.0842	1.8358	1.00	2.20
	3		33	2.5818	.90050	.15676	2.2625	2.9011	1.00	4.00
	Total		57	2.5053	.99219	.13142	2.2420	2.7685	1.00	4.80

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Cluster Number of Case	(J) Cluster Number of Case	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
AvgCGSI	1	2	2.35333 [*]	.35536	.000	1.4982	3.2085
		3	.90476 [*]	.26863	.004	.2583	1.5512
	2	1	-2.35333 [*]	.35536	.000	-3.2085	-1.4982
		3	-1.44857 [*]	.31212	.000	-2.1997	-.6975
	3	1	-.90476 [*]	.26863	.004	-1.5512	-.2583
		2	1.44857 [*]	.31212	.000	.6975	2.1997
AvgCGOI	1	2	1.33542 [*]	.39901	.004	.3757	2.2952
		3	.82351 [*]	.29871	.021	.1050	1.5420
	2	1	-1.33542 [*]	.39901	.004	-2.2952	-.3757
		3	-.51190	.35492	.326	-1.3656	.3418
	3	1	-.82351 [*]	.29871	.021	-1.5420	-.1050
		2	.51190	.35492	.326	-.3418	1.3656
AvgMSFlex	1	2	1.44167 [*]	.26975	.000	.7928	2.0905
		3	.52262 [*]	.20194	.032	.0369	1.0083
	2	1	-1.44167 [*]	.26975	.000	-2.0905	-.7928
		3	-.91905 [*]	.23994	.001	-1.4962	-.3419
	3	1	-.52262 [*]	.20194	.032	-1.0083	-.0369
		2	.91905 [*]	.23994	.001	.3419	1.4962
AvgMSRules	1	2	1.00937 [*]	.26679	.001	.3680	1.6508
		3	.68576 [*]	.19885	.003	.2077	1.1639

	2	1	-1.00937*	.26679	.001	-1.6508	-.3680
		3	-.32361	.23657	.364	-.8924	.2452
	3	1	-.68576*	.19885	.003	-1.1639	-.2077
AvgOCTeamandRespectfor People		2	.32361	.23657	.364	-.2452	.8924
	1	2	1.11587*	.26492	.000	.4778	1.7540
		3	.39342	.19475	.117	-.0757	.8625
	2	1	-1.11587*	.26492	.000	-1.7540	-.4778
		3	-.72246*	.23553	.009	-1.2898	-.1551
	3	1	-.39342	.19475	.117	-.8625	.0757
AvgRuleOrientation		2	.72246*	.23553	.009	.1551	1.2898
	1	2	1.48542*	.26616	.000	.8449	2.1259
		3	.40012	.20017	.122	-.0816	.8818
	2	1	-1.48542*	.26616	.000	-2.1259	-.8449
		3	-1.08529*	.23752	.000	-1.6569	-.5137
	3	1	-.40012	.20017	.122	-.8818	.0816
AvgCompetitiveandAggressive		2	1.08529*	.23752	.000	.5137	1.6569
	1	2	1.80000*	.30812	.000	1.0589	2.5411
		3	.60714*	.23067	.029	.0523	1.1620
	2	1	-1.80000*	.30812	.000	-2.5411	-1.0589
		3	-1.19286*	.27407	.000	-1.8521	-.5336
	3	1	-.60714*	.23067	.029	-1.1620	-.0523
AvgOSCostandMarketLeadership		2	1.19286*	.27407	.000	.5336	1.8521
	1	2	1.40764*	.28068	.000	.7315	2.0837
		3	.49148	.20522	.052	-.0028	.9858

	2	1	-1.40764*	.28068	.000	-2.0837	-.7315
		3	-.91616*	.25332	.002	-1.5264	-.3060
	3	1	-.49148	.20522	.052	-.9858	.0028
AvgOSCustomerServiceOrientation		2	.91616*	.25332	.002	.3060	1.5264
	1	2	.97000*	.24032	.000	.3922	1.5478
		3	.32222	.17912	.179	-.1084	.7529
	2	1	-.97000*	.24032	.000	-1.5478	-.3922
		3	-.64778*	.21310	.010	-1.1601	-.1354
	3	1	-.32222	.17912	.179	-.7529	.1084
AvgOSFocusProductDifferentiation		2	.64778*	.21310	.010	.1354	1.1601
	1	2	1.64000*	.28882	.000	.9450	2.3350
		3	.68000*	.21833	.008	.1546	1.2054
	2	1	-1.64000*	.28882	.000	-2.3350	-.9450
		3	-.96000*	.25367	.001	-1.5704	-.3496
	3	1	-.68000*	.21833	.008	-1.2054	-.1546
AvgITU		2	.96000*	.25367	.001	.3496	1.5704
	1	2	.93333*	.34025	.022	.1142	1.7525
		3	-.06520	.25834	.966	-.6872	.5568
	2	1	-.93333*	.34025	.022	-1.7525	-.1142
		3	-.99853*	.29982	.004	-1.7204	-.2767
	3	1	.06520	.25834	.966	-.5568	.6872
AvgITC		2	.99853*	.29982	.004	.2767	1.7204
	1	2	1.72336*	.33661	.000	.9112	2.5355
		3	.51849	.25246	.110	-.0906	1.1276

	2	1	-1.72336*	.33661	.000	-2.5355	-.9112
		3	-1.20486*	.29727	.000	-1.9220	-.4877
	3	1	-.51849	.25246	.110	-1.1276	.0906
AvgITI		2	1.20486*	.29727	.000	.4877	1.9220
	1	2	1.47500*	.30799	.000	.7335	2.2165
		3	.61071*	.23523	.032	.0444	1.1770
	2	1	-1.47500*	.30799	.000	-2.2165	-.7335
		3	-.86429*	.26673	.006	-1.5064	-.2221
	3	1	-.61071*	.23523	.032	-1.1770	-.0444
AvgHCSA		2	.86429*	.26673	.006	.2221	1.5064
	1	2	1.65313*	.37010	.000	.7629	2.5433
		3	.64598	.27706	.059	-.0204	1.3124
	2	1	-1.65313*	.37010	.000	-2.5433	-.7629
		3	-1.00714*	.32920	.009	-1.7990	-.2153
	3	1	-.64598	.27706	.059	-1.3124	.0204
AvgHCMT		2	1.00714*	.32920	.009	.2153	1.7990
	1	2	1.61143*	.35421	.000	.7578	2.4651
		3	.48961	.27287	.181	-.1680	1.1472
	2	1	-1.61143*	.35421	.000	-2.4651	-.7578
		3	-1.12182*	.30881	.002	-1.8661	-.3776
	3	1	-.48961	.27287	.181	-1.1472	.1680
		2	1.12182*	.30881	.002	.3776	1.8661

*. The mean difference is significant at the 0.05 level.

APPENDIX 15A CORRELATION OF VARIABLES BEFORE REMOVAL OF NON-SIGNIFICANT VARIABLES

		Correlations															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. AvgPMS	Pearson Correlation	1	.704**	.444**	.678**	.546**	.524**	.616**	.574**	.631**	.515**	.605**	.429**	.585**	.673**	.487**	.591**
	Sig. (2-tailed)		.000	.003	.000	.000	.000	.000	.000	.000	.000	.000	.004	.000	.000	.001	.000
	N	45	44	44	44	45	44	44	44	41	45	44	44	45	45	44	44
2. AvgCGSI	Pearson Correlation	.704**	1	.649**	.626**	.435**	.551**	.643**	.482**	.530**	.588**	.663**	.472**	.485**	.505**	.267*	.256
	Sig. (2-tailed)	.000		.000	.000	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.041	.057
	N	44	60	60	59	60	56	58	59	56	60	59	58	54	58	59	56
3. AvgCGOI	Pearson Correlation	.444**	.649**	1	.474**	.489**	.430**	.476**	.265*	.405**	.465**	.467**	.183	.136	.363**	.319*	.182
	Sig. (2-tailed)	.003	.000		.000	.000	.001	.000	.041	.002	.000	.000	.170	.326	.005	.013	.181
	N	44	60	61	60	61	57	59	60	57	61	59	58	54	58	60	56
4. AvgMSFlex	Pearson Correlation	.678**	.626**	.474**	1	.690**	.657**	.595**	.393**	.448**	.531**	.518**	.455**	.396**	.550**	.256*	.323*
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.002	.000	.000	.000	.000	.003	.000	.049	.015
	N	44	59	60	61	61	57	59	60	58	61	59	59	54	58	60	56
5. AvgMSRules	Pearson Correlation	.546**	.435**	.489**	.690**	1	.668**	.581**	.443**	.568**	.602**	.479**	.466**	.417**	.493**	.256*	.197
	Sig. (2-tailed)	.000	.001	.000	.000		.000	.000	.000	.000	.000	.000	.000	.002	.000	.047	.142
	N	45	60	61	61	62	58	60	61	58	62	60	59	55	59	61	57

6.	Pearson	.524**	.551**	.430**	.657**	.668**	1	.816**	.535**	.614**	.834**	.678**	.592**	.431**	.549**	.156	.161
	AvgOCTeam	.000	.000	.001	.000	.000		.000	.000	.000	.000	.000	.000	.001	.000	.248	.250
	andRespectfo	44	56	57	57	58	58	56	58	54	58	56	55	52	55	57	53
	rPeople																
7.	Pearson	.616**	.643**	.476**	.595**	.581**	.816**	1	.572**	.707**	.793**	.761**	.606**	.548**	.622**	.312*	.340*
	AvgRuleOrien	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.016	.011
	tation	44	58	59	59	60	56	60	59	56	60	58	57	53	57	59	55
	N																
8.	Pearson	.574**	.482**	.265*	.393**	.443**	.535**	.572**	1	.747**	.413**	.749**	.531**	.630**	.408**	.359**	.467**
	AvgCompetiti	.000	.000	.041	.002	.000	.000	.000		.000	.001	.000	.000	.000	.001	.005	.000
	veandAgressi	44	59	60	60	61	58	59	61	57	61	59	58	54	58	60	56
	ve																
9.	Pearson	.631**	.530**	.405**	.448**	.568**	.614**	.707**	.747**	1	.720**	.732**	.483**	.583**	.469**	.283*	.345**
	AvgOSCosta	.000	.000	.002	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.033	.011
	ndMarketLea	41	56	57	58	58	54	56	57	58	58	57	56	51	55	57	53
	dership																
10.	Pearson	.515**	.588**	.465**	.531**	.602**	.834**	.793**	.413**	.720**	1	.614**	.548**	.467**	.461**	.130	.123
	AvgOSCusto	.000	.000	.000	.000	.000	.000	.000	.001	.000		.000	.000	.000	.000	.317	.361
	merServiceOr	45	60	61	61	62	58	60	61	58	62	60	59	55	59	61	57
	ientation																
11.	Pearson	.605**	.663**	.467**	.518**	.479**	.678**	.761**	.749**	.732**	.614**	1	.541**	.603**	.565**	.387**	.393**
	AvgOSFocus	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.002	.003
	ProductDiffer	44	59	59	59	60	56	58	59	57	60	60	58	54	58	59	56
	entation																

12. AvgITU	Pearson Correlation Sig. (2-tailed) N	.429** 44	.472** 58	.183 58	.455** 59	.466** 59	.592** 55	.606** 57	.531** 58	.483** 56	.548** 59	.541** 58	1 59	.733** 54	.616** 58	.290* 58	.227 55
13. AvgITC	Pearson Correlation Sig. (2-tailed) N	.585** 45	.485** 54	.136 54	.396** 54	.417** 55	.431** 52	.548** 53	.630** 54	.583** 51	.467** 55	.603** 54	.733** 54	1 55	.739** 55	.612** 54	.490** 54
14. AvgITI	Pearson Correlation Sig. (2-tailed) N	.673** 45	.505** 58	.363** 58	.550** 58	.493** 59	.549** 55	.622** 57	.408** 58	.469** 55	.461** 59	.565** 58	.616** 58	.739** 55	1 59	.519** 58	.476** 56
15. AvgHCSA	Pearson Correlation Sig. (2-tailed) N	.487** 44	.267* 59	.319* 60	.256* 60	.256* 61	.156 57	.312* 59	.359** 60	.283* 57	.130 61	.387** 59	.290* 58	.612** 54	.519** 58	1 61	.686** 57
16. AvgHCMT	Pearson Correlation Sig. (2-tailed) N	.591** 44	.256 56	.182 56	.323* 56	.197 57	.161 53	.340* 55	.467** 56	.345* 53	.123 57	.393** 56	.227 55	.490** 54	.476** 56	.686** 57	1 57

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

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

APPENDIX 15B CORRELATION OF VARIABLES AFTER REMOVAL OF NON-SIGNIFICANT VARIABLES

Correlations														
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1. AvgPMS	Pearson													
	Correlati	1	.704**	.678**	.546**	.524**	.616**	.574**	.631**	.515**	.605**	.429**	.585**	
	on													
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.004	.000	
	N	45	44	44	45	44	44	41	45	44	44	45	45	
2. AvgCGSI	Pearson													
	Correlati	.704**	1	.626**	.435**	.551**	.643**	.482**	.530**	.588**	.663**	.472**	.485**	
	on													
	Sig. (2-tailed)	.000		.000	.001	.000	.000	.000	.000	.000	.000	.000	.000	
	N	44	60	59	60	56	58	59	56	60	59	58	58	
3. AvgMSFlex	Pearson													
	Correlati	.678**	.626**	1	.690**	.657**	.595**	.393**	.448**	.531**	.518**	.455**	.396**	
	on													
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.002	.000	.000	.000	.000	.003	
	N	44	59	61	61	57	59	60	58	61	59	59	58	
4. AvgMSRules	Pearson													
	Correlati	.546**	.435**	.690**	1	.668**	.581**	.443**	.568**	.602**	.479**	.466**	.417**	
	on													

	tailed) N	41	56	58	58	54	56	57	58	58	57	56	51	55
9. AvgOSCustomerServiceOrientation	Pearson Correlation Sig. (2-tailed) N	.515** .000 45	.588** .000 60	.531** .000 61	.602** .000 62	.834** .000 58	.793** .000 60	.413** .001 61	.720** .000 58	1 .000 62	.614** .000 60	.548** .000 59	.467** .000 55	.461** .000 59
10. AvgOSFocusProductDifferentiation	Pearson Correlation Sig. (2-tailed) N	.605** .000 44	.663** .000 59	.518** .000 59	.479** .000 60	.678** .000 56	.761** .000 58	.749** .000 59	.732** .000 57	.614** .000 60	1 .000 60	.541** .000 58	.603** .000 54	.565** .000 58
11. AvgITU	Pearson Correlation Sig. (2-tailed) N	.429** .004 44	.472** .000 58	.455** .000 59	.466** .000 59	.592** .000 55	.606** .000 57	.531** .000 58	.483** .000 56	.548** .000 59	.541** .000 58	1 .000 59	.733** .000 54	.616** .000 58
12. AvgITC	Pearson Correlation Sig. (2-tailed)	.585** .000	.485** .000	.396** .003	.417** .002	.431** .001	.548** .000	.630** .000	.583** .000	.467** .000	.603** .000	.733** .000	1 .000	.739** .000

	N	45	54	54	55	52	53	54	51	55	54	54	55	55
13. AvgITI	Pearson	.673**	.505**	.550**	.493**	.549**	.622**	.408**	.469**	.461**	.565**	.616**	.739**	1
	Correlati on													
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000	
	N	45	58	58	59	55	57	58	55	59	58	58	55	59

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

**APPENDIX 15C CORRELATION OF VARIABLES AFTER REMOVAL OF NON-SIGNIFICANT VARIABLES AND
CORRELATION >0.70**

Correlations								
	AvgPMS	CorporateGovernanceStrategicInvolvement	CorporateGovernanceOperationalInvolvement	ManagementStyleFlexible	ManagementStyleRuleOriented	OrganizationalCultureTeamandRespectforPeople	OrganizationalStrategyFocusProductDifferentiation	InformationTechnologyInvestment
AvgPMS	Pearson Correlation Sig. (2-tailed) N	.704** .000 45	.444** .003 44	.678** .000 44	.546** .000 45	.524** .000 44	.605** .000 44	.673** .000 45
CorporateGovernanceStrategicInvolvement	Pearson Correlation Sig. (2-tailed) N	.704** .000 44	.649** .000 60	.626** .000 59	.435** .001 60	.551** .000 56	.663** .000 59	.505** .000 58
CorporateGovernanceOperationalInvolvement	Pearson Correlation Sig. (2-tailed) N	.444** .003 44	1 .000 61	.474** .000 60	.489** .000 61	.430** .001 57	.467** .000 59	.363** .005 58
ManagementStyleFlexible	Pearson Correlation Sig. (2-tailed) N	.678** .000 44	.474** .000 60	1 .000 61	.690** .000 61	.657** .000 57	.518** .000 59	.550** .000 58
ManagementStyleRuleOriented	Pearson Correlation Sig. (2-tailed) N	.546** .000 44	.489** .000 60	.690** .000 61	1 .000 61	.668** .000 57	.479** .000 59	.493** .000 58

leOriented	Correlation Sig. (2-tailed) N	.000 45	.001 60	.000 61	.000 61	.000 61	.000 62	.000 58	.000 60	.000 59
OrganizationalCultur eTeamandRespectfo rPeople	Pearson Correlation Sig. (2-tailed) N	.524** 44	.551** 56	.430** 57	.657** 57	.668** 58	1 58	.678** 56	.549** 55	
OrganizationalStrate gyFocusProductDiffe rentation	Pearson Correlation Sig. (2-tailed) N	.605** 44	.663** 59	.467** 59	.518** 59	.479** 60	.678** 56	1 60	.565** 58	
InformationTechnolo gyInvestment	Pearson Correlation Sig. (2-tailed) N	.673** 45	.505** 58	.363** 58	.550** 58	.493** 59	.549** 55	.565** 58	1 59	

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

APPENDIX 16 MLR

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	AvgITI, AvgCompetitiveandAgressive, AvgOSCustomerServiceOrientatio n, AvgMSFlex, AvgITU, AvgCGSI, AvgMSRules, AvgOSFocusProductDifferentiation , AvgITC, AvgOSCostandMarketLeadership, AvgRuleOrientation, AvgOCTeamandRespectforPeopl e ^a		Enter
2		AvgITC	Backward (criterion: Probability of F-to-remove >= .100).
3		AvgMSRules	Backward (criterion: Probability of F-to-remove >= .100).
4		AvgRuleOrientation	Backward (criterion: Probability of F-to-remove >= .100).
5		AvgOSCustomerSer viceOrientation	Backward (criterion: Probability of F-to-remove >= .100).
6		AvgOCTeamandRes pectforPeople	Backward (criterion: Probability of F-to-remove >= .100).
7		AvgOSFocusProduct Differentiation	Backward (criterion: Probability of F-to-remove >= .100).
8		AvgOSCostandMark etLeadership	Backward (criterion: Probability of F-to-remove >= .100).

a. All requested variables entered.

b. Dependent Variable: AvgPMS

Model Summary^f

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829 ^a	.687	.626	.42277
2	.825 ^b	.681	.630	.42090
3	.822 ^c	.675	.633	.41935
4	.818 ^d	.669	.635	.41781
5	.816 ^e	.666	.641	.41430

a. Predictors: (Constant), InformationTechnologyInvestment, CorporateGovernanceOperationalInvolvement, ManagementStyleRuleOriented, OrganizationalStrategyFocusProductDifferentiation, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

b. Predictors: (Constant), InformationTechnologyInvestment, CorporateGovernanceOperationalInvolvement, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

c. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

d. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

e. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible, CorporateGovernanceStrategicInvolvement

f. Dependent Variable: AvgPMS

ANOVA^f

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.142	7	2.020	11.303	.000 ^a
	Residual	6.435	36	.179		
	Total	20.577	43			
2	Regression	14.022	6	2.337	13.192	.000 ^b
	Residual	6.555	37	.177		
	Total	20.577	43			
3	Regression	13.894	5	2.779	15.802	.000 ^c
	Residual	6.682	38	.176		
	Total	20.577	43			
4	Regression	13.769	4	3.442	19.719	.000 ^d
	Residual	6.808	39	.175		
	Total	20.577	43			
5	Regression	13.711	3	4.570	26.627	.000 ^e
	Residual	6.866	40	.172		
	Total	20.577	43			

a. Predictors: (Constant), InformationTechnologyInvestment, CorporateGovernanceOperationalInvolvement, ManagementStyleRuleOriented, OrganizationalStrategyFocusProductDifferentiation, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

b. Predictors: (Constant), InformationTechnologyInvestment, CorporateGovernanceOperationalInvolvement, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

c. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

d. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible,

OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

e. Predictors: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible, CorporateGovernanceStrategicInvolvement

f. Dependent Variable: AvgPMS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.6416	4.5251	3.6354	.57138	57
Std. Predicted Value	-3.552	1.554	-.022	1.012	57
Standard Error of Predicted Value	.063	.259	.119	.043	57
Adjusted Predicted Value	1.3976	4.4758	3.5489	.56598	43
Residual	-.69716	.84530	.08636	.37471	43
Std. Residual	-1.683	2.040	.208	.904	43
Stud. Residual	-1.784	2.087	.221	.953	43
Deleted Residual	-.78382	.88475	.09757	.41883	43
Stud. Deleted Residual	-1.836	2.183	.224	.968	43
Mahal. Distance	.010	15.826	3.019	3.509	57
Cook's Distance	.000	.234	.029	.049	43
Centered Leverage Value	.000	.368	.070	.082	57

a. Dependent Variable: AvgPMS

Excluded Variables^e

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
					Tolerance	VIF	Minimum Tolerance
2 OrganizationalStrategyFocusProductDifferentiation	.122 ^a	.820	.417	.135	.394	2.535	.341
3 OrganizationalStrategyFocusProductDifferentiation	.120 ^b	.814	.421	.133	.394	2.535	.360
CorporateGovernanceOperationalInvolvement	-.109 ^b	-.849	.402	-.138	.519	1.925	.366
4 OrganizationalStrategyFocusProductDifferentiation	.122 ^c	.831	.411	.134	.395	2.534	.395
CorporateGovernanceOperationalInvolvement	-.069 ^c	-.564	.576	-.091	.568	1.760	.422
ManagementStyleRuleOriented	.119 ^c	.845	.403	.136	.434	2.305	.368
5 OrganizationalStrategyFocusProductDifferentiation	.066 ^d	.499	.621	.080	.488	2.051	.450

ifferentiation							
CorporateGovernanceOperationalInvolvement	-.074 ^d	-.606	.548	-.097	.571	1.752	.429
ManagementStyleRuleOriented	.074 ^d	.572	.570	.091	.504	1.983	.380
OrganizationalCultureTeamandRespectforPeople	-.075 ^d	-.575	.569	-.092	.502	1.993	.449

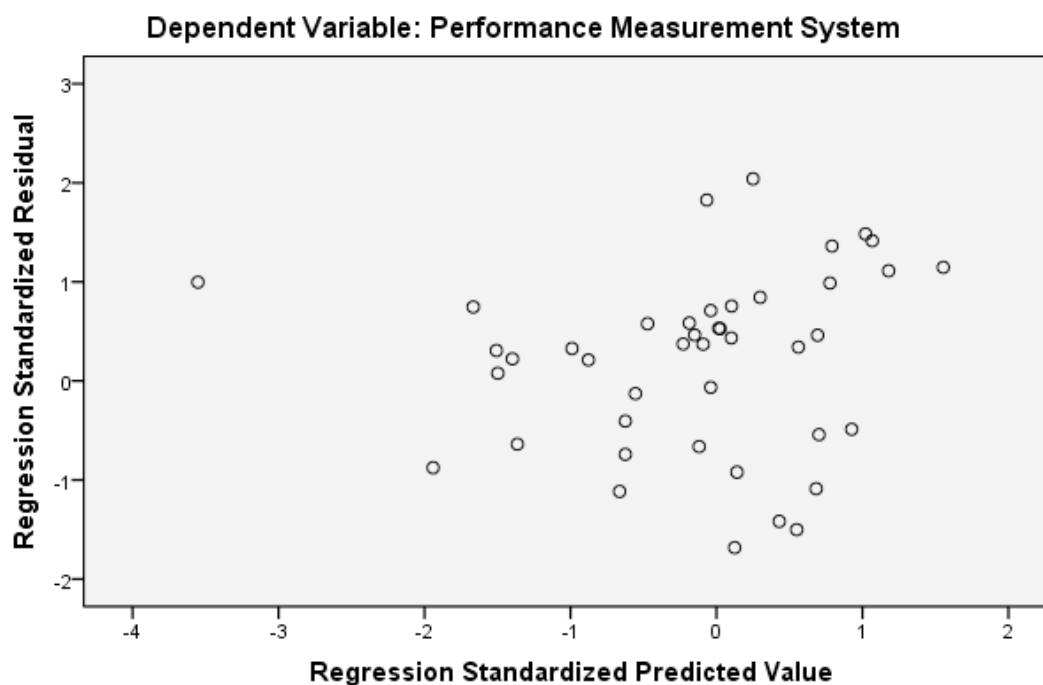
a. Predictors in the Model: (Constant), InformationTechnologyInvestment, CorporateGovernanceOperationalInvolvement, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

b. Predictors in the Model: (Constant), InformationTechnologyInvestment, ManagementStyleRuleOriented, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

c. Predictors in the Model: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible, OrganizationalCultureTeamandRespectforPeople, CorporateGovernanceStrategicInvolvement

d. Predictors in the Model: (Constant), InformationTechnologyInvestment, ManagementStyleFlexible, CorporateGovernanceStrategicInvolvement

e. Dependent Variable: AvgPMS



Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant) Corporate Governance Strategic Involvement Corporate Governance Operational Involvement Management Style Flexible Management Style Rule Oriented Organizational Culture Team and Respect for People Organizational Strategy Focus Product Differentiation Information Technology Investment	.982	.423			2.320	.026	.124	1.840					
	.249	.097	.409		2.565	.015	.052	.446	.704	.393	.239	.341	2.933
	-.071	.083	-.110		-.854	.399	-.240	.098	.444	-.141	-.080	.519	1.925
	.209	.134	.242		1.561	.127	-.062	.480	.678	.252	.145	.360	2.776
	.144	.138	.154		1.039	.306	-.137	.424	.546	.171	.097	.397	2.522
	-.172	.151	-.177		-1.138	.263	-.480	.135	.524	-.186	-.106	.360	2.781
	.097	.118	.122		.820	.417	-.142	.336	.605	.135	.076	.394	2.535
2 (Constant) Corporate Governance Strategic Involvement Corporate Governance Operational Involvement	.259	.098	.325		2.643	.012	.060	.458	.673	.403	.246	.574	1.744
	1.002	.421			2.382	.022	.149	1.854					
	.279	.090	.458		3.111	.004	.097	.460	.704	.455	.289	.396	2.522
	-.070	.083	-.109		-.849	.402	-.238	.098	.444	-.138	-.079	.519	1.925

	ManagementStyleFlexible	.195	.132	.226	1.476	.148	-.073	.462	.678	.236	.137	.366	2.733
	ManagementStyleRuleOriented	.145	.138	.155	1.054	.299	-.134	.424	.546	.171	.098	.397	2.522
	OrganizationalCultureTeamandRespectforPeople	-.122	.138	-.125	-.885	.382	-.401	.157	.524	-.144	-.082	.431	2.322
	InformationTechnologyInvestment	.278	.095	.349	2.923	.006	.085	.470	.673	.433	.271	.606	1.651
3	(Constant)	.952	.415		2.294	.027	.112	1.792					
	CorporateGovernanceStrategicInvolvement	.239	.076	.393	3.141	.003	.085	.393	.704	.454	.290	.546	1.832
	ManagementStyleFlexible	.202	.131	.235	1.543	.131	-.063	.468	.678	.243	.143	.368	2.720
	ManagementStyleRuleOriented	.111	.131	.119	.845	.403	-.155	.376	.546	.136	.078	.434	2.305
	OrganizationalCultureTeamandRespectforPeople	-.116	.137	-.119	-.847	.402	-.394	.161	.524	-.136	-.078	.432	2.316
	InformationTechnologyInvestment	.281	.095	.352	2.964	.005	.089	.472	.673	.433	.274	.606	1.649
4	(Constant)	1.042	.399		2.610	.013	.235	1.850					
	CorporateGovernanceStrategicInvolvement	.231	.075	.381	3.075	.004	.079	.384	.704	.442	.283	.553	1.807
	ManagementStyleFlexible	.250	.118	.290	2.110	.041	.010	.489	.678	.320	.194	.449	2.228
	OrganizationalCultureTeamandRespectforPeople	-.073	.127	-.075	-.575	.569	-.329	.183	.524	-.092	-.053	.502	1.993
	InformationTechnologyInvestment	.289	.094	.362	3.076	.004	.099	.478	.673	.442	.283	.613	1.633

APPENDIX 17. MEMO FROM AMD of CASE B (5 year plan)

Reference	
Date	
To	
From	Acting MD
Subject	: Department's Performance Review of January to September 2010, and Budget and Department's Strategic Plan Proposal for 2011

السلام عليكم ورحمة الله وبركاته

1. In reference to the above, each Department's head is required to prepare proposal for the yearly Budget and Departmental Strategic Plan. This shall be an extract of what has been prepared previously which was submitted to HRC Dept on Business Plan 2011 – 2015.
2. The content of the Budget Proposal should include the following:
 - Financial Performance against budget of 2010 (year-to-date performance) and previous year's comparison (2009). Marketing plans 2009 should also be assessed to ensure effectiveness in 2009.
 - Department's SWOT analysis. [To identify and measure strength, weaknesses, opportunities and threats].
 - Department's Organisation Chart for 2011 to be proposed.
 - Department's Mission, Vision and Objectives to be proposed.
 - Marketing objectives and monthly planning for 2010 for Products' departments.
 - Department's strategic planning and operational planning of 2010 to be proposed.
 - Department's financial forecast & budget of 2010 (sales, cost of sales, operating expenses, fixed assets acquisition and write off).

All Budget request must be reasonable and justifiable and need to be in line with Darussalam Holdings' corporate objectives.
3. Please be informed that if you are unable to submit the proposal by 30th October 2010, you are required to write in for approval to extend stating the reason(s) for the delay.
4. Thank you for your attention and your cooperation for the above is highly appreciated.

APPENDIX 18. EXHIBITOR SURVEY of CASE C

Study in UK Education Fair Exhibitors comments

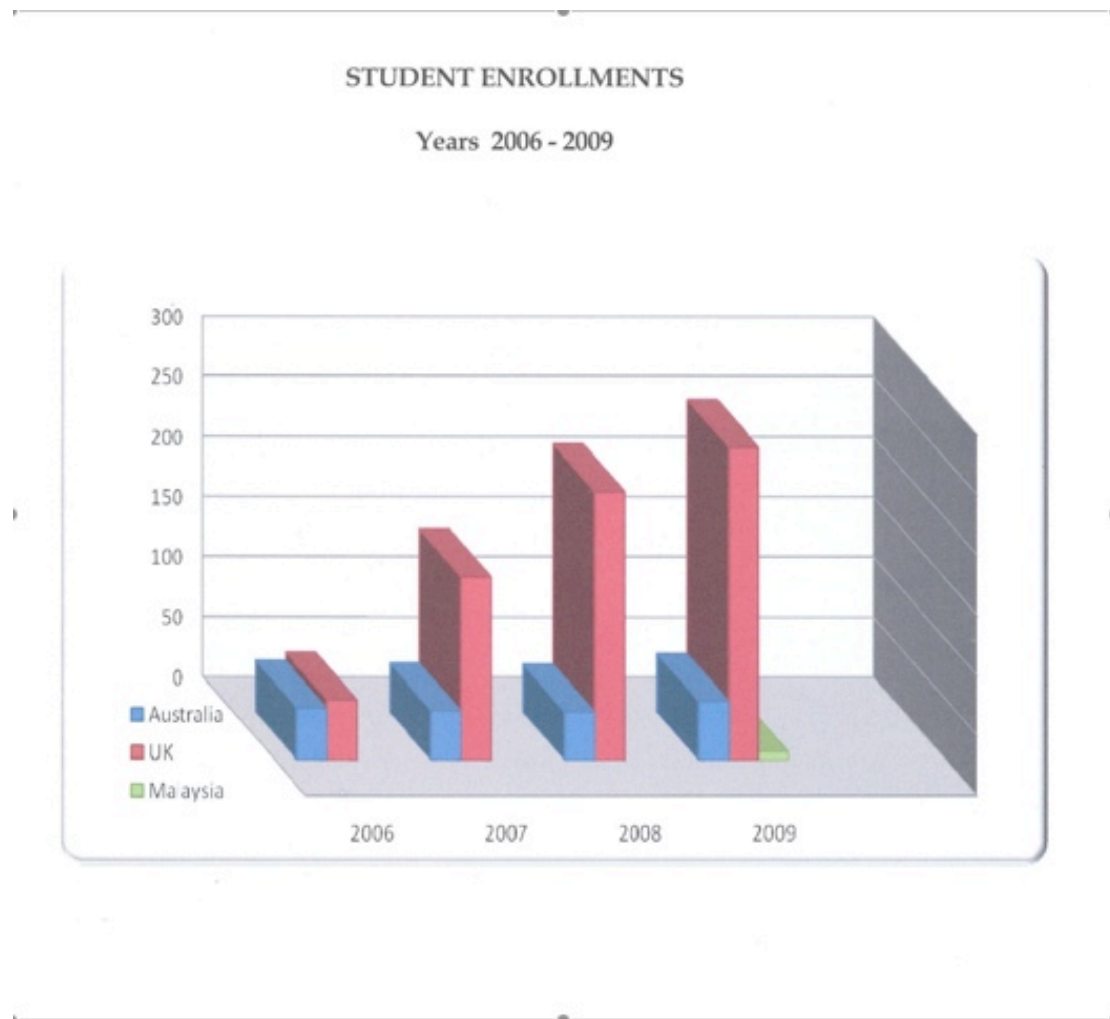
20 November 2009
Brunei

EXHIBITORS COMMENTS

We hope you have had a successful exhibition in Brunei. HRD Services is interested in continually improving the quality of the education fairs we offer to our client universities. Please share your experiences with us; your feedback will be taken into consideration when preparing for future such events.

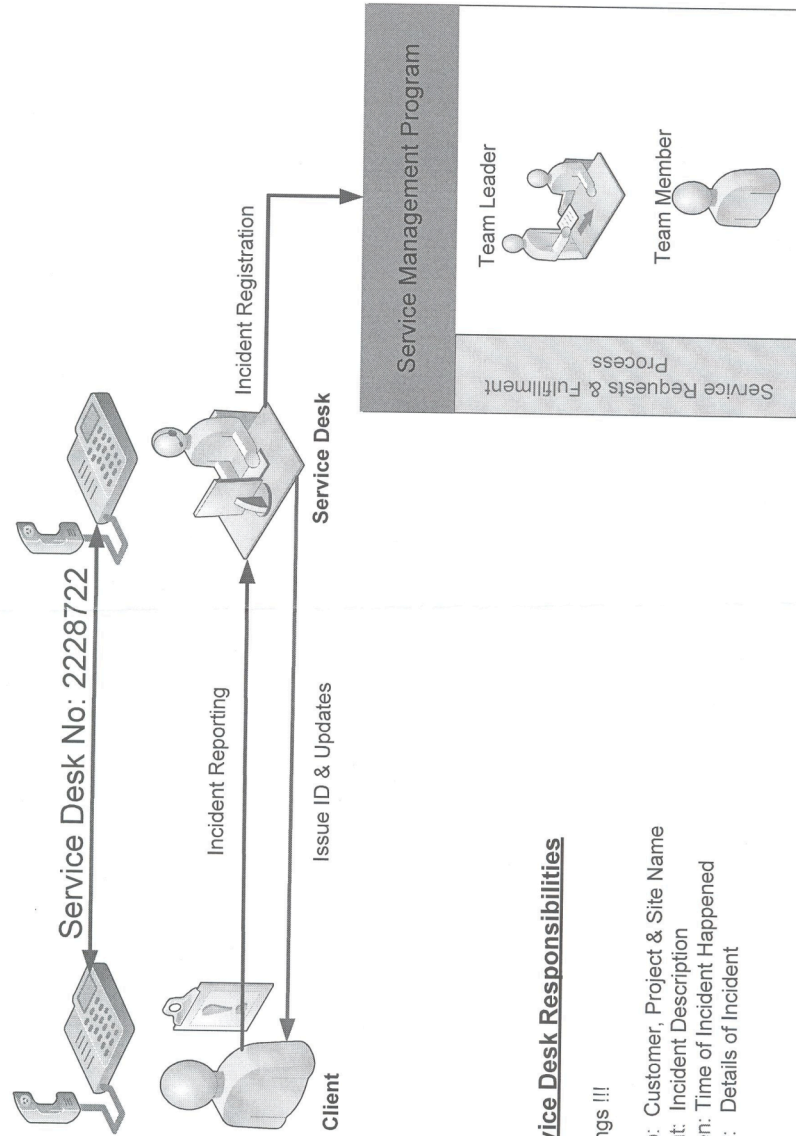
	Poor	Average			Excellent	Comments
1. Your overall response to this year's event	1	2	3	4	5	.....
2. The number of visitors to your stand	1	2	3	4	5	.....
3. The number of serious enquiries	1	2	3	4	5	Fact finding stage for many students
4. Level of enquiries for 2010 entry	1	2	3	4	5	.....
5. Level of enquiries for 2011 and future	1	2	3	4	5	.....
6. Overall attendance vs previous event	1	2	3	4	5	.....
7. Quality time with attendees	1	2	3	4	5	.....
8. <i>Exhibition organisation</i>						
7.1. Publicity	1	2	3	4	5	.....
7.2. Venue	1	2	3	4	5	.....
7.3. Location of venue	1	2	3	4	5	Located a little further out.
7.4. Exhibition hours	1	2	3	4	5	.....
7.5. Duration of exhibition	1	2	3	4	5	.....
7.6. Hotel (please provide name)	1	2	3	4	5	Empire Hotel
7.7. Freight arrangements (DJG)	1	2	3	4	5	.....
7.8. Invitation material	1	2	3	4	5	.....
7.9. Pre-departure information	1	2	3	4	5	.....
7.10. Briefing	1	2	3	4	5	.....
7.11. Cost of exhibition vs. value	1	2	3	4	5	.....
8. Any specific information you would like included in the pack(s)/briefing						

APPENDIX 19. GRAPH ON STUDENT ENROLLMENT IN CASE C



APPENDIX 20. SERVICE RESK WORKFLOW of CASE D

Service Desk Workflow

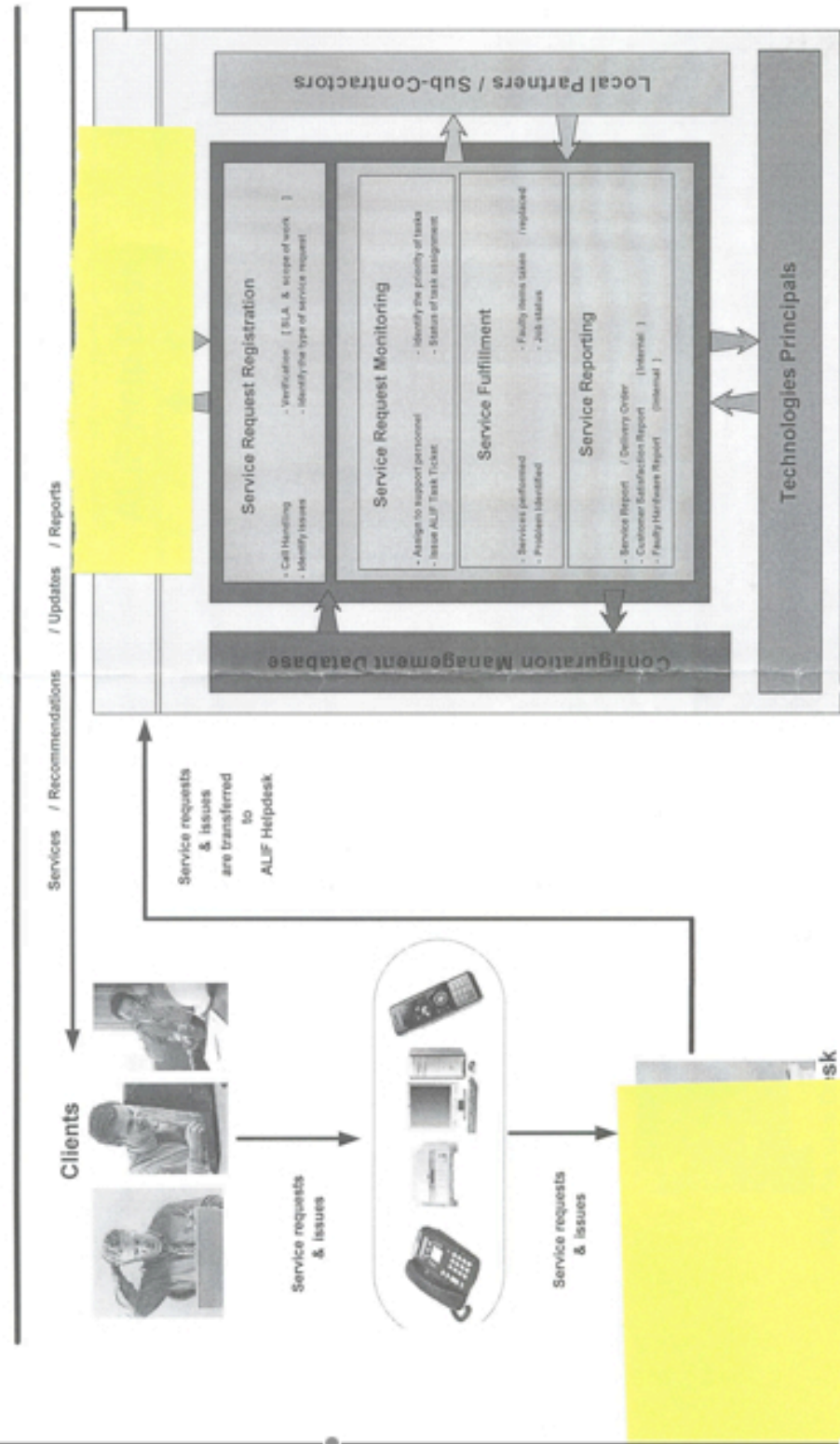


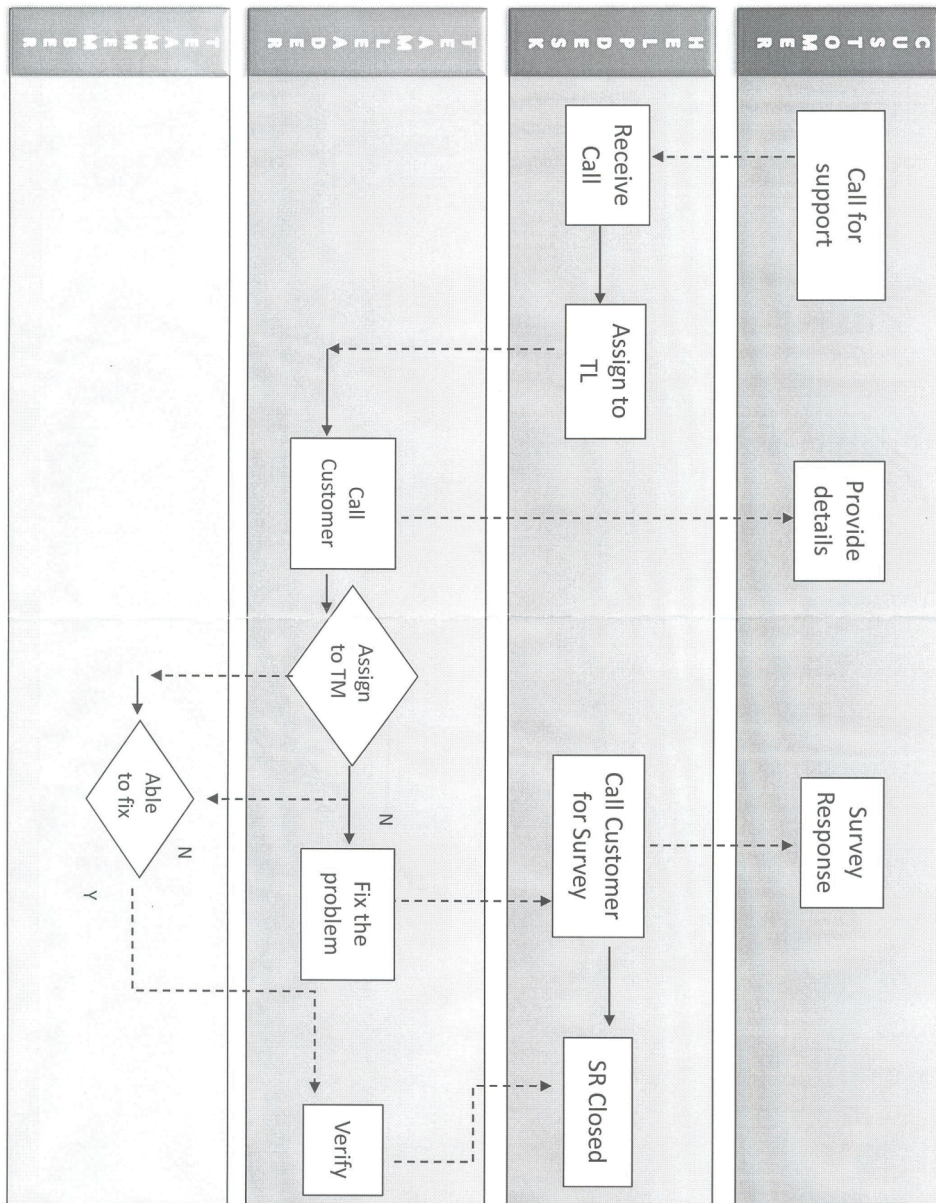
Service Desk Responsibilities

Greetings !!!

1. Who: Customer, Project & Site Name
2. What: Incident Description
3. When: Time of Incident Happened
4. How: Details of Incident

Support & Maintenance Model





APPENDIX 21. Code References for Figure 41 (Drivers)

Category	Sub-categories	Identified Themes
Corporate Governance (CG)	Strategic Involvement	Owner involved in the strategic planning (CGd1)
	Operational Involvement	Owner less involved at the operational level (CGd2)
Information Technology	Management Information System	Use of IT to facilitate communication (ITd1) Clear linkage of customer database (ITd2) Clear share of information amongst subordinates (ITd3)
Organizational Culture (OC)	Employer/Employee Relationship	- The management personal approach towards subordinates (OCd1)
	Employees Feedback and comments taken into consideration	- The management practice open-door policy (OCd2)
	Work Culture	- Importance of teamwork and team achievement rather than individual goal (OCd3)
Organization Strategy (OS)	Business Intelligence (OSd1)	- Proactive towards the market needs (OSd1.1) - Good reputation improve performance (OSd1.2)
	Clear Policy (OSd2)	- Clear and transparent Mission and Vision (OSd2.1) - Good practice of five-year business plan / strategic planning (OSd2.2)
	Customer service orientation (OSd3)	- Clear communication with customer (OSd3.1) - Product and services attractiveness and maturity were clearly monitored (OSd3.2) - Customer retention were clearly monitored (OSd3.3)
Management Style (MS)	Open Communication and Respect towards subordinates (MSd1)	
	Authoritative Management Style (MSd2)	
	Sense of direction by the MDs (MSd3)	
	Frequent of Meeting (MSd4)	
Human Capital (HC)	Management Training	- Managers were send for management training (HCd1)
	Experience Manager	- Qualified manager with vast management experience (HCd2)
	Clear Job Description and Task (HCd3)	- Employees were given targets and understood their task from the beginning (HCd3.1)
External Stakeholders (ES)	Local Government Rules and Regulation (ESd1)	- Requirement to submit five-year plan and other reports (ESd1.2) - Use of government rules to set targets (ESd1.1)
	Foreign Government Rules and Regulation (ESd2)	- Requirement by foreign government to follow their standard and regulations (ESd2.1)
	Supply Chain (ESd3)	- Targets were enforced to suppliers (ESd3.1) - Targets were enforced to distributors (ESd3.2) - Targets enforced by clients/customers (ESd3.3)
	Market Trends	- Changes in the market force active monitoring system

	(ESd4)	(ESd4.1)
Business Process (BP)	Work System (BPd1)	- Clear workflows for employees to follow (BPd1.1)
	Work Policy and Procedures (BPd2)	- Existence of targets on work process (BPd2.1) - Existence of checklist and procedures - Sign-off documents for verification
	Updated Work Process (BPd3)	- Reviewed and revised based on comments and feedbacks (BPd3.1) - Up-to-date work process and does not burden the employees (BPd3.2)

APPENDIX 22. Code References for Figure 42 (Barriers)

Category	Sub-categories	Identified Themes
Corporate Governance (CG)	Operational Involvement Issue	Owner involvement at the operational level affect daily activities (CGB1)
Information Technology (IT)	IT Infrastructure Issue (ITb2)	Limited Information sharing due to manual system (ITb2.1) Limited staff capacity to handle vast amount of data (ITb2.2)
	IT Investment Issue (ITb1)	High cost of IT investment (ITb1.1)
Organizational Culture (OC)	Lack of conducive Employer/Employee Relationship (OCb1)	- Reluctant to Share Information (OCb1.1) - Sensitive national culture hinder criticism (OCb1.2)
	Commitment to change Issue Ocb2)	- Difficulty to change attitude from previous work culture (OCb2.1)
Organization Strategy (OS)	Lack of understanding of the Mission and Vision at the lower level management (OSb1)	
Management Style (MS)	Targets were given without prior agreement with the lower level employees (MSb1)	
Human Capital (HC)	Lack of Experienced Human Resources (HCb1)	- Locals prefer to work with the government (HCb1.1) - Lack of proper management training (HCb1.2)
External Stakeholders (ES)	None Identified	
Business Process (BP)	Absence of Documentation Culture (BPb1)	- Difficulties to identify key work process to develop KPI (BPb1.1)