AWARENESS AND UNDERSTANDING OF GOVERNMENT TOTAL ASSET MANAGEMENT IMPLEMENTATION STRATEGY

MOHD. ROSZAIMY BIN MUSA

A project report submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Asset and Facilities Management

Faculty of Geoinformation and Real Estate
Universiti Teknologi Malaysia

JANUARY 2015

DEDICATION

To Allah Almighty for His abundance merciful and guidance
To my beloved parents Musa Alias and Rosnah Mohamadin
for effortless support and love
&
To my supervisor Dr. Rohaya Abdul Jalil for being a great mentor.

ACKNOWLEDGEMENT

In preparing this thesis, I was in contact with many people, academicians and practitioners that have contributed towards my understanding and thoughts. First and foremost, I wish to express my sincere appreciation to my project supervisor, Dr. Rohaya Abdul Jalil for encouragement, guidance, critics and friendship. I am also very thankful to my Programme Coordinator, Dr. Mat Naim Abdullah for his dedication, advices and motivation. Without their continued support and interest, this project would not have been the same as presented here.

I am also grateful to have Public Service Department of Malaysia (JPA) for funding my Master Degree study in pursuing my career path to serve the nation with credential knowledge. My appreciation also goes to a wonderful people of Asset Management Policy Unit at Public Asset Management Division, Treasury of Malaysia for their willing helps and commitment.

My fellow postgraduate friends should also be recognised for their support. My sincere appreciation also extends to all my colleagues and others who have provided assistance at various occasions. Their views and tips are useful indeed.

The upmost gratitude I have is to my beloved parents and family who effortlessly support me with love throughout this journey.

ABSTRACT

Management of government assets have been dealing with various vulnerabilities as stated in the Auditor General's Report. It seems that, there is a gap of understanding and awareness amongst government employees regarding on the spirit of Government Asset Management Policy and the operation of their daily work as managers and guardians for government assets. The aim of this study is to examine the relationship of understanding and awareness of employees towards four strategic implementation elements that withdrawn from policy document known as governance, process, technology and human in their routine at work. Mixed mode research was designed to explore the current practice, which is focusing on the management of government movable assets. Content analysis was performed on eight working procedures to identify whether there is a presence of the elements in those documents, and it revealed that all elements were discovered. A questionnaire survey was design from this output to test the level of understanding and awareness of employees. Descriptive analysis of data collected from 239 respondents in Asset Management Unit of Federal Ministries and Departments demonstrated that, the level of understanding and awareness amongst respondents towards strategic implementation elements was good. However, total awareness level has a lower mean score than the understanding level. Therefore, correlation and regression analysis was conducted to find the relationship between understanding the elements and employees' level of awareness, which has resulted with significant correlations between those variables. In fact, understanding the element of process was the highest contribution to increase asset personnel awareness on their routine of work followed by understanding the element of governance, while the element of technology and human has no contribution towards it. It is recommended to further this study on different asset management context and its population.

ABSTRAK

Pengurusan aset kerajaan telah berhadapan dengan pelbagai kelemahan seperti yang dilaporkan di dalam Laporan Audit Negara. Ia mengambarkan bahawa wujudnya jurang antara pemahaman dan kesedaran di kalangan kakitangan kerajaan berkaitan intipati Dasar Pengurusan Aset Kerajaan dan pelaksanaan tugasan harian mereka sebagai pengurus dan penjaga aset kerajaan. Tujuan kajian ini adalah untuk mengenalpasti sejauhmana hubungan kefahaman dan kesedaran terhadap elemen pelaksaan dasar di dalam rutin kerja pegawai. Terdapat empat elemen yang telah digariskan oleh strategi pelaksanaan dasar iaitu urustadbir, proses, teknologi dan manusia. Rekabentuk kajian ini adalah bersifat campuran bagi meneroka bentuk pelaksanaan sedia ada dengan menumpukan kepada pengurusan aset alih kerajaan. Analisis kandungan dilakukan ke atas lapan prosedur pengurusan aset alih kerajaan untuk mengenalpasti sama ada wujudnya elemen tersebut di dalam prosedur kerja pegawai, dan penemuan membuktikan bahawa semua elemen tersebut telah digariskan oleh prosedur. Melalui penemuan ini, sebuah instrumen kajian berbentuk borang kaji selidik telah dibentuk bagi menguji tahap kefahaman dan kesedaran pegawai berhubung dengan elemen pelaksanaan. Analisis deskriptif ke atas data yang dikumpul daripada 239 responden di Unit Pengurusan Aset Kementerian dan Jabatan Persekutuan menunjukkan bahawa tahap kefahaman dan kesedaran kakitangan terhadap elemen pelaksanaan adalah baik. Namun begitu, tahap kesedaran responden menunjukkan skor min yang rendah berbanding tahap kefahaman mereka. Analisis korelasi dan regresi dijalankan bagi tujuan megenalpasti hubungan antara kefahaman tehadap elemen tersebut dan tahap kesedaran pegawai; dan hasilnya telah membuktikan bahawa wujudnya hubungan antara pembolehubah tersebut. Malah, pemahaman terhadap elemen proses menyumbang kesan yang tinggi kepada tahap kesedaran pegawai diikuti pula oleh elemen urustadbir, sementara elemen teknologi dan manusia tidak menyumbang kepadanya. Kajian lanjut boleh dilakukan ke atas populasi pelaksanaan aset yang lain.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	THESIS STATUS DECLARATION	
	SUPERVISOR'S DECLARATION	
	TITLE PAGE	i
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiv
	LIST OF ABBREVIATION	xv
	LIST OF APPENDIX	xvi
1	**INTRODUCTION**	
	1.1 Overview	1
	1.1.1 Background of Study	2
	1.2 Problem Statement	6
	1.3 Research Aim	8
	1.4 Research Question	9
	1.5 Scope of Study	9
	1.6 Research Methodology	10
	1.6.1 Step 1: Literature Review and Secondary Data	10

CHAPTER	TITLE		PAGE
	1.6.2	Step 2: Data Collection of Primary Data	11
	1.6.3	Step 3: Data Analysis	11
	1.6.4	Step 4: Finding and Suggestion	11
	1.6.5	Step 5: Conclusion and Recommendation	12
1.7	Research Design		12
1.8	Limitation of Study		14
	1.8.1	Period of Study and Budget	14
	1.8.2	Place of Study	14
	1.8.3	Data Collection and Respondents of Study Assumption	14
1.9	Significant of Study		15
	1.9.1	Government of Malaysia	16
	1.9.2	Federal Ministries and Department	16
	1.9.3	Body of Knowledge	17
1.10	Chapters Outline		
	1.10.1	Chapter 1: Introduction	17
	1.10.2	Chapter 2: Literature Review	18
	1.10.3	Chapter 3: Research Methodology	18
	1.10.4	Chapter 4: Data Analysis and Findings	18
	1.10.5	Chapter 5: Discussion, Conclusion and Recommendation	19
1.11	Summary		19
2	**LITERATURE REVIEW**		
2.1	Introduction		20
2.2	Overview on Awareness and Understanding		20
2.3	Defining Asset		22
2.4	Defining Movable Asset		24
2.5	Defining Asset Management		25
2.6	Overview on Strategic Management		27

CHAPTER	TITLE	PAGE
	2.7 Strategic Asset Management	28
	2.8 Integrated Asset Management	30
	2.9 Government Strategic Asset Management Best Practice	31
	2.10 GAMP	34
	2.10.1 Malaysia TAMM	38
	2.10.1.1 Element of Governance	38
	2.10.1.2 Element of Process	40
	2.10.1.3 Element of Technology	42
	2.10.1.4 Element of People	43
	2.11 Previous Study On Malaysia GAMP	43
	2.12 Summary	45
3	**RESEARCH METHODOLOGY**	
	3.1 Introduction	46
	3.2 Research Plan and Design	46
	3.3 Procedure One	49
	3.3.1 Literature and Documents Review	49
	3.3.2 Data Collection and Analysis	50
	3.4 Procedure Two	53
	3.4.1 Pilot Study	53
	3.4.1.1 First Phase – Expert Review	54
	3.4.1.2 Second Phase – Preliminary Respondents	55
	3.4.2 Data Collection	56
	3.4.2.1 Population and Sampling	56
	3.4.2.2 Development of Research Instrument	58
	3.4.2.3 Reliability and Validity Test	64
	3.4.2.4 Questionnaire Distribution	66
	3.4.3 Data Analysis	66
	3.5 Procedure Three	67

CHAPTER	TITLE		PAGE
	3.6	Summary	69
4	**DATA ANALYSIS AND FINDINGS**		
	4.1	Introduction	71
	4.2	Findings of Procedure One	71
	4.3	Response Rate	74
	4.4	Findings of Procedure Two	74
		4.4.1 Section One – Respondent Background	75
		4.4.1.1 Service Group	75
		4.4.1.2 Place of Work	76
		4.4.1.3 Working Experience	76
		4.4.1.4 Training Attended	76
		4.4.1.5 Type of Asset Managed	77
		4.4.2 Section Two – Findings on Level of Awareness of TAMM Implementation Strategy Elements	80
		4.4.2.1 Element of Governance	80
		4.4.2.2 Element of Process	81
		4.4.2.3 Element of Technology	82
		4.4.2.4 Element of Human	82
		4.4.3 Section Three – Findings on Level of Understanding of TAMM Implementation Strategy Elements	83
		4.4.3.1 Element of Governance	84
		4.4.3.2 Element of Process	84
		4.4.3.3 Element of Technology	86
		4.4.3.4 Element of Human	86
		4.4.4 Section Four – Comparing Mean Score Between Level of Awareness And Understanding Across Respondent's Background	87
		4.4.5 Section Five – Ranking of Mean Score	90

CHAPTER	TITLE		PAGE
	4.5	Findings of Procedure Three	91
		4.5.1 Hypotheses Testing Analysis Tools	91
		4.5.2 Findings of Hypotheses Code H1, H2, H3 and H4	93
		4.5.3 Findings of Hypothesis Code H5	95
	4.6	Summary	101
5	**DISCUSSION, CONCLUSION AND RECOMMENDATION**		
	5.1	Introduction	102
	5.2	Summary on The Study	102
	5.3	Discussion on Research Objective One Outcome	103
	5.4	Discussion on Research Objective Two Outcome	105
	5.5	Discussion on Research Objective Three Outcome	106
	5.6	Conclusion of The Study	108
	5.7	Implication of Study	110
	5.8	Recommendation of Future Study	111
	5.9	Limitation of Study	112
	5.10	Contribution to Body of Knowledge	112
	5.11	Summary	112
REFERENCES			114
Appendix A			121
Appendix B			127

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Forms and Aspects of Awareness	21
2.2	Class of Property, Plant and Equipment Under IPSAS 17	23
2.3	Definition of Asset Management	25
2.4	Literature Reviews on Asset Management Best Practices	23
2.5	Strategic Implementation of GAMP	36
2.6	Details of Responsibility Structure of GAMP	40
3.1	Analysis Template For TAMM and MAM Documents	52
3.2	Details of Panel of Expert for Questionnaire Validation	54
3.3	Content Analysis Finding of Expert Opinion Upon Questionnaire	55
3.4	Stratified Random Sampling Composition	57
3.5	Element Tested in Questionnaire Survey	58
3.6	Questionnaire Survey Items	60
3.7	Likert Scale Measurement For Questionnaire Survey	63
3.8	Coefficient of Cronbach's Alpha	64
3.9	Result of Internal Reliability Test	65
3.10	Interpretation of Correlation Coefficient Level	69
4.1	Summary of Content Analysis Findings	73
4.2	Respond Rate of Data Collection	74
4.3	Summary of Respondent's Background Findings	78
4.4	Respondent Awareness On The Element of Governance	80
4.5	Respondent Awareness On The Element of Process	81

LIST OF TABLES

TABLE NO.	TITLE	PAGE
4.6	Respondent Awareness On The Element of Technology	82
4.7	Respondent Awareness On The Element of Human	83
4.8	Respondent Understanding On The Element of Governance	84
4.9	Respondent Understanding On The Element of Process	85
4.10	Respondent Understanding On The Element of Technology	86
4.11	Respondent Understanding On The Element of Human	87
4.12	Mean Score Between Level of Awareness and Respondent's Background Attributes	88
4.13	Mean Score Between Level of Understanding and Respondent's Background Attributes	89
4.14	Rank of Element's Mean Score Between Level of Awareness and Level of Understanding	90
4.15	Hypotheses Tested in Research Question Three	92
4.16	Correlation and Significant Test Output	93
4.17	Summary of Standard Multiple Regression Analysis Output	97
4.18	Summary of Stepwise Multiple Regression Analysis Output	98

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
1.1	Federal Ministry Asset Expenditure And Registered Value From Year of 2007 to 2013	3
1.2	A.I Auditing Performance on Ministries Financial Management From Year of 2009 to 2012	5
1.3	Research Design Framework	13
2.1	Bloom's Taxonomy of Cognitive	22
2.2	Relationship Between Organisations Strategic Planning and Asset	29
2.3	Integrated Asset Management Framework	30
2.4	The Element of Asset Management System in ISO55000	32
2.5	Responsibility Structure for Government Asset Management	39
2.6	TAMM General Model	42
3.1	Flowchart of Research Plan and Design	48
3.2	Theoretical Framework For Research Question Three	68
4.1	Respondent's Back Cross Attribute Findings	79
4.2	Linearity, Normality and Homoscedasticity Results	96
4.3	Summary of Hypotheses Results	101
5.1	Awareness and Understanding Role in Strategic Asset Management	109

LIST OF ABBREVIATION

ABBREVIATION

ANOVA	-	Analysis of Variance
BSI	-	British Standards Institute
EFNMS	-	European Federation of National Maintenance Societies
GAMP	-	Government Asset Management Policy
GAO	-	General Audit Office
GLC	-	Government Link Agency
GTP	-	Government Transformation Programme
IAM	-	Institute of Asset Management
IFAC	-	International Federation of Accountants
IIMM	-	International Infrastructure Management Manual
IPSAS	-	International Public Sector Accounting System
ISO	-	International Strandards Organisation
JKR	-	Public Work Department
JPAK	-	Government Asset Management Committee
KPI	-	Key Performance Indicator
MAM	-	Movable Asset Management
ME	-	Managerial Expenditure
MySPATA	-	Non-Movable Asset Management System
PAS	-	Public Available Spesification
R&D	-	Research and Development
RFID	-	Radio-frequency identification
SPA	-	Movable Asset Management System
SPSS	-	Statistical Package for the Social Sciences
TAMM	-	Total Asset Management Manual

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Draft of Questionnaires Survey Form	121
B	Full Report of Content Analysis Output	127

CHAPTER 1

INTRODUCTION

1.1 Overview

Assets are important strategic resources to a country, which are expensive to build, maintain and manage through out time. Asset support and enable a whole range of service delivery functions within the Government and have significant costs associated with them and absorb significant levels of investment. Within a constrained resource environment, asset needs to be clearly recognised, justified and prioritised upon its acquisition. Therefore, it requires a monitoring and controlling system to ensure asset is served to be at its best-optimised performance over is effective useful life.

Asset management, like any management function, is a part of good governance. Hence, the performance and the quality of service should have a delicate balancing of costs according to the requirement and regulation in managing them (Schneider et. al., 2006). This should have been done under a good atmosphere of accountability and transparency in creating value in governing asset by restoring the leadership quality in asset management organisation to boost the effectiveness and the efficiency of asset management. Therefore, aligning the business strategy of an organisation along with asset management strategy will ensure day-to-day processes or activities to achieve the desired goal. From the perspective of effective asset management, which is focusing on the outcome and objectives driven by asset management strategy, University of Leeds (2006) has proven that the successful implementation required a mutual and coordination effort across asset management

organisation change process. Therefore, people in organisation play important roles to ensure all strategies are executed accordingly.

Woodhouse (2006) claimed that the most important aspect of successful optimised and sustained asset management is ultimately on people site where hearts, mind and collaboration are joined together. Therefore, a good strategy planning with mixture of knowledge and change management during its implementation process will be rewarding its need of changes in the management practice people engagement and organisation culture to optimizing the performance and competitiveness in organisation. (Brunetto, Xerri and Nelson, 2013). This will significantly result with a successful implementation of an asset management framework. By having this, the effectiveness and efficiency of strategic asset management can be implemented with great accomplishment.

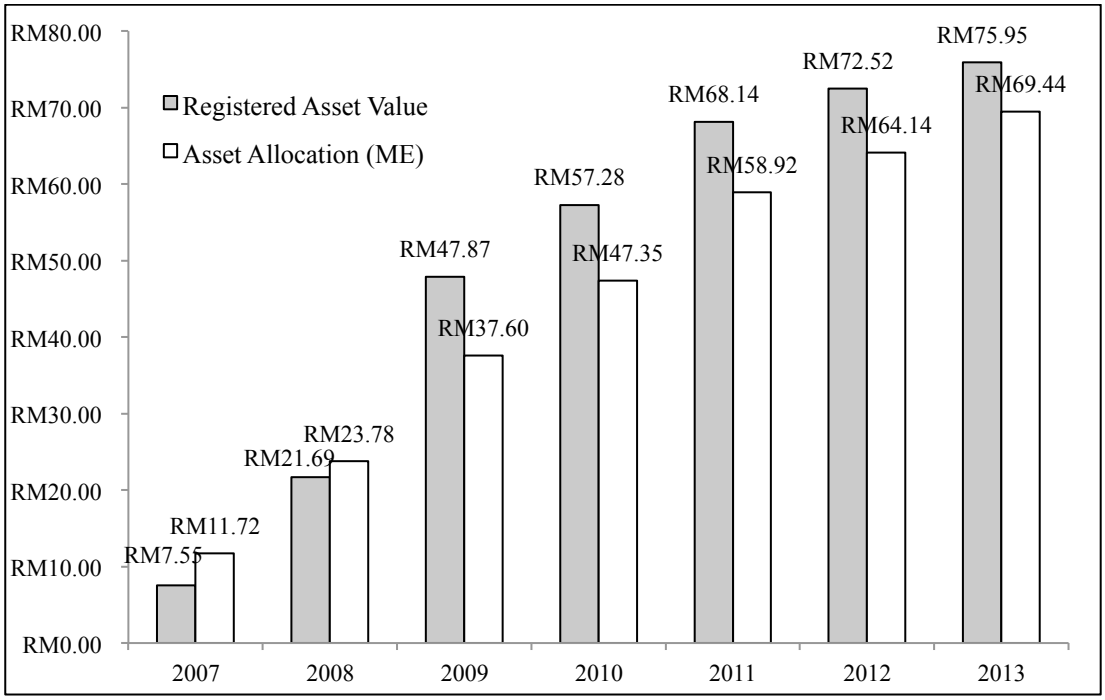
1.1.1 Background of Study

Since financial recession in 1997, good corporate governance had been enforced by Malaysia Government to uphold a good public service delivery system to par (Samad, 2007). Recently public assets are not subjected to balance sheet recognition and valuation in Malaysia. The existing Government accounting system is based on cash basis that only shows budget allocation and actual expenditure incurred for asset procurement or construction projects for the year concerned. It does not show the actual cost and present value of all the existing assets. The allocation for minor repairs, maintenance and upgrading or renovating of government assets are not recognised in the overall lifecycle cost of assets.

Therefore, under Government Transformation Program (GTP) for public government transformation initiatives, a new accounting standards will be introduced in 2015 known as accrual based accounting and one of its main concern is regarding government asset values in hope for better management in future (Saleh and Pendlebury, 2006).

Government had proposed an allocation of RM5.3 billion in Managerial Expenditure (ME) for asset purchases in 2013 national budget for all ministries to acquire additional assets, or enhancing the office spaces for a better and conducive environment for staffs in providing their best service to customers. Some agencies have taken this issue negatively due to reports on ineffective management of the government asset, which has burdened them with audit queries. This is because the existing assets were not managed and maintained despite having new one.

These issues have been further highlighted when Treasury of Malaysia launched the Treasury Circular No.5 in year 2007, known as Movable Asset Management (MAM) procedure. Every ministry has to submit the report on asset management activities for ministries and departments level, which include the progress of asset procurement over budget that has been allocated and also the book value of registered assets they owned so far. Graph in Figure 1.1 shows that the cumulative asset allocation has increased nearly 8.5% every year in average.



Source: Treasury of Malaysia, 2013

Figure 1.1: Federal Ministry Asset Expenditure and Registered Value From Year of 2007 to 2013

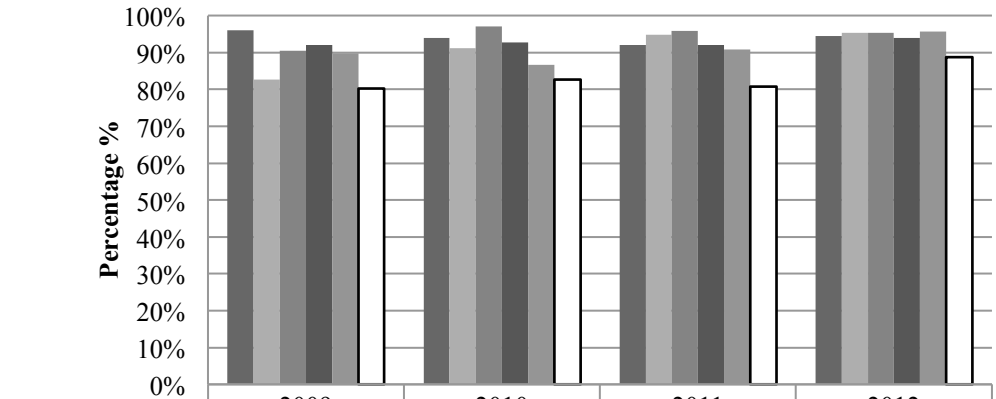
On the other hand, the amount of asset registered has shown significant higher than the allocation because there is no depreciation value applied to recorded assets and also some assets are received from contribution of private sectors and Government Link Company (GLC). There are RM69.44 billion of budget allocation for movable assets management activities and RM75.95 billion in values of registered assets according to 2013 report.

However, over the years the Audit Office has encountered dismay reports on government asset management activities and programmes, which included of acquisition of asset, registration process, maintenance activities, disposal programme and theft cases, which implied to waste of people's money due to lack of management. This is one of the reasons why public perception of public governance has always been negative. This issue will continue unless firm measures are urgently taken to improve the competency level of those who are involved in procuring, managing, maintaining and disposing Government assets as well as strict enforcement of rules and regulations pertaining to Government assets.

Though Government Asset Management Policy (GAMP) of Malaysia was launched in 2009 as part of rules and regulation to govern asset management, General Audit Office (GAO) has responsibility to monitor asset management activities ages before the policy was published. General Auditor of Malaysia in his report will address on the effectiveness and compliances of every Ministry and Department towards Government Financial Management, in which asset management is one of its sub-sector. The purpose of this auditing is to monitor the accountability and integrity of federal officer to foster good financial management in organisation to ensure no mismanage being carried out in managing people's money.

Since a new auditing programmed called Accountability Index Auditing (A.I) launched in 2007, Asset Management has been included as a new auditing category along with the management of procedure; budgeting allocation control; managing of receivables and payable accounts; and proper practice of trusts account under Government Financial Auditing. This audit programme has become an important criterion for Federal Government Good Governance Rating because it will reflect on

Top Management Key Performance Index (KPI) of Ministry and all Financial Officer of The Ministry, which is Ministry Secretarial General, are responsible to the result. Figure 1.2 shows the performance of Assets Management Auditing for A.I. by sectors in from 2009 to 2012.



	2009	2010	2011	2012
Management	96.00%	94.00%	92.10%	94.40%
Budget	82.70%	91.20%	94.80%	95.40%
Receivable	90.50%	97.10%	95.90%	95.40%
Payable	92.00%	92.70%	92.10%	94.00%
Trust Account	89.70%	86.70%	90.90%	95.70%
Asset and Store	80.20%	82.60%	80.80%	88.70%

Source: General Audit Office, 2012

Figure 1.2: A.I Auditing Performance on Ministries Financial Management From Year of 2009 to 2012 (by Sectors)

The graph shows, that amongst 6 sectors of Federal Financial Management Auditing, Asset and Store has not reach the "very satisfactory" level through out the 4 years. This indicate that though the management of assets at Ministries level are "good" yet it does not reach the desirable effectiveness and compliances towards better financial management of the organisation in some aspects when other sectors has accomplished.

1.2 Problem Statement

Although auditing on assets management has been done all this while, the Federal Ministries and Departments are suffered with negatives reports upon the effectiveness and efficiency in managing them. GAO (2009:2012) has never missed to reveal issues on lack of asset planning; undesirable procurement of assets; improper records and tracking of machines and office equipment; lack of planning and usage of sports equipment; lack of machines maintenance; improper disposal methods and thefts issues. On the other hand, auditors also claimed on lack of manpower and incompetency of assets personnel as sources of this ineffectiveness issues. From year to year, recommendation to give proper training to asset personnel has been done by the ministries, yet the issues persistence (GAO, 2010b:2012b).

GAMP was then being introduced with good intention as a foundation to ensure a systematic, holistic and sustainable management of government asset by optimising the benefit of it in supporting the needs of service delivery. Total Asset Management Manual (TAMM) was established to support the policy document as a strategic planning tools with objective to govern the management of all categories of government asset (non-movable, movable, biological and stocks) to be in the most strategic and effective way. The manual contains principles and concept of asset management with highlights on roles and responsibility of every government organisation to meet GAMP objectives. It also formulates strategies and how the strategy should be implemented through out the process or procedure that leads people to its success. This document structure is part of remedies to aid problems in managing government assets.

Previous studies have highlighted that successful of strategy implementation comes with good integration of clear strategy formulation; good organisation structure; good corporate structure; leadership and top management involvement; aware of people competency; team commitments; knowledge management; change management; link to performance; communication and execution plan (Alamsjah, 2011). On the other hand Kohtamaki et. al. (2011) indicates that personnel commitment to strategy implementation has positive relationship towards company

performance. His conclusion has supported Corny and O'Corrbui in Atkinson (2006) findings that lack of understanding on how the strategy should be implemented, not fully appreciating the strategy and ignorance over day-to-day business rules resulted for poor strategic implementation to achieve business goal.

Though the current practices of assets management are simply limited to fulfil managerial activities such as maintenance while there is clear lack of strategies component (Abdullah et. al, 2011), there will always ways for improvement to be taken for better tomorrow by understanding the present issues of change process in organisation towards intended strategies in developing culture and knowledge amongst workers (Zheng, Yang and McLean, 2010).

The early study on GAMP shows that the willingness level among government staffs was high towards the implementation of TAMM, which indicate a good signal of accepting a new change in managing government assets (Misnan et. al. 2012). However, Yusof (2013) found out that during early implementation of TAMM, some assets managers and operators have not effectively taken it up and resulted with their non-satisfactory level of awareness and understanding of TAMM. Both studies were focusing on the perception of asset personnel in managing non-movable assets towards the overall concepts of TAMM and yet to touch on its strategy element and its implementation towards user's day-to-day routine of work through available procedure documents.

Due to the lack of study on elements of asset management implementation strategy and perception of its implementation from other type of government asset personnel, this study will be a good chance for Malaysia Government to review the current situation by examining the awareness and understanding level amongst asset personnel that managed government movable asset towards it. Furthermore, it will help to recognise elements that contribute to the successful of strategic implementation in day-to-day routine of managing government assets. Therefore, it will give a proper basis aiming for the improvement in asset management effectiveness and promote better participation of asset personnel towards GAMP objectives.

1.3 Research Aim

The aim of this research is to investigate the level of understanding and awareness of asset personnel regarding the elements of implementation in Asset Management Strategy for Government of Malaysia and examine the relationship between understanding the elements of TAMM implementation strategy and awareness towards it. This may result in the improvement of implementation of current asset management practices and will lead for better management of Government Asset in future.

1.4 Research Objective

In general, these research objectives will focus on the level of understanding and awareness of asset personnel of federal agencies regarding the implementation of TAMM. Therefore, this study will underline three objectives as follow:

(i) To identify TAMM strategic implementation element as to whether it is aligned with MAM;

(ii) To investigate the level of awareness and understanding of asset personnel regarding the TAMM strategy implementation elements; and

(iii) To examine the relationship between awareness and understanding of TAMM strategic implementation elements.

1.4 Research Questions

The study seeks to address the following questions in highlight of research objectives respectively as follows:

(i) What are the TAMM strategic implementation elements that has been emphasised in MAM?

(ii) What is the level of awareness and understanding amongst asset personnel concerning on TAMM implementation strategy in MAM?

(iii) What is the relationship between understanding TAMM implementation strategy elements towards the awareness of TAMM implementation in MAM?

1.5 Scope of Study

The scope of this research is focused only to the GAMP for Government of Malaysia that has been practiced by all federal ministries and departments. The main concern of this study is regarding document structure that has been introduced in this policy.

This study will run in two phases. First is to examine the relevant documents regarding the practices of managing government assets. Therefore, the scopes of document that will be reviewed are only related to the movable assets management. While in the second phase, a questionnaire will be distributed to Asset Personnel who is involved directly in managing the movable assets management in federal agencies. Due to limited time of the study, the respondents were selected from Asset Management Unit personnel in every federal ministry and federal department headquarters. Though the questionnaires are given to headquarters personnel, the

results from this study can be generalised for all federal agencies because of the typical structures of command in the federal sectors. Most of the locations of federal agencies headquarters are in Kuala Lumpur and Putrajaya.

1.6 Research Methodology

This study adopting mixed mode research approach that comprised qualitative and quantitative research. It involves 5 steps with a purpose to analyse and conclude the source of data that has been collected for every objective. This will help researcher to solve the main objective in the study, which is to investigate the level of awareness and understanding of TAMM implementation strategy elements amongst federal asset personnel and examine its relationship. The steps will be discussed as follows:-

1.6.1 Step 1: Literature Review and Secondary Data

Qualitative research was applied in this step in which the theoretical research will be done focusing on the definition of basic subject of the study. Therefore, an extensive review upon current situation and preferred solution of the problem has been done by rigorous review on previous researches regarding the strategic asset management and to explore the elements that contribute to effectiveness of policy implementation in organisation. Content analysis was applied throughout the government policies documents and related procedure documents of MAM to further understand the practice of managing the government movable assets.

1.6.2 Step 2: Data Collection of Primary Data

The main source of data collection method used in this study was through questionnaires. The questionnaire was an adaptation from Yusof (2013). There are some changes made to suit with TAMM implementation strategy elements for federal movable asset management. A pilot study of questionnaire instruments was done to test its validity and reliability before it was distributed to main respondents through emails. It was sent directly to all assets personnel in 24 federal ministries and 152 federal department headquarters in Kuala Lumpur and Putrajaya. The respondents were asked to complete the questionnaires within given time frame.

1.6.3 Step 3: Data Analysis

Each research question will be an input for the next question, therefore there will be a different needs and methods for data analysis in this study. Therefore, three procedures of data analysis has been design to answer each research question. For the first question, data will be analysed in terms of its contents as we get it from the secondary data by comparing MAM procedure and TAMM implementation strategy. This data will then be represented as input in developing questionnaires to fulfil the second and third research questions. Next, a descriptive analysis was applied to answer the second research question that produced mean scores of awareness and understanding level of TAMM. Finally, an inferential statistic was applied on hypotheses by using correlation and regression test to answered the last research question.

1.6.4 Step 4:Finding and Discussion

In this step, the finding from every research question will be discussed to further clarify the needs and outcome of the research. This will help researcher to

find the validity of the data collected and represented in this study therefore it will help to minimise triangulation issues regarding the objective of the study, resource and method used.

1.6.5 Step 5: Conclusion and Recommendation

The final and last step in the study is to conclude the finding by answering its major research question and to develop a better understanding of its outcome. This study can be a good platform for future study especially to deepen the knowledge of the subjects and also its methodology.

1.7 Research Design

This research was design in exploratory mode that has been designed to include five basic steps. It begins with identifying the problem that needs to be researched. Then formulating the research questions and its objectives will follow. Next is to critically review upon extensive literature based on the formulated objectives to ensure an appropriate data to be collected in the study. Literature reviews was done to gather relevant theories, basic concepts of asset management and ideal practices of asset management in federal organisation. Some government records and documents were also being reviewed for further understanding.

Consequently to that, the data collected will be analysed using a suitable techniques and the result of the analysis will be presented accordingly. In his study, the data collection of first research question was used to develop questionnaire. A pilot study was run to test the validity of the questionnaires before it was distributed to the selected respondents. The study will end by making a logical conclusion from its finding and recommendation for future betterment or expansion of the study. Figure 1.3 will represent the research approach designed for this study.

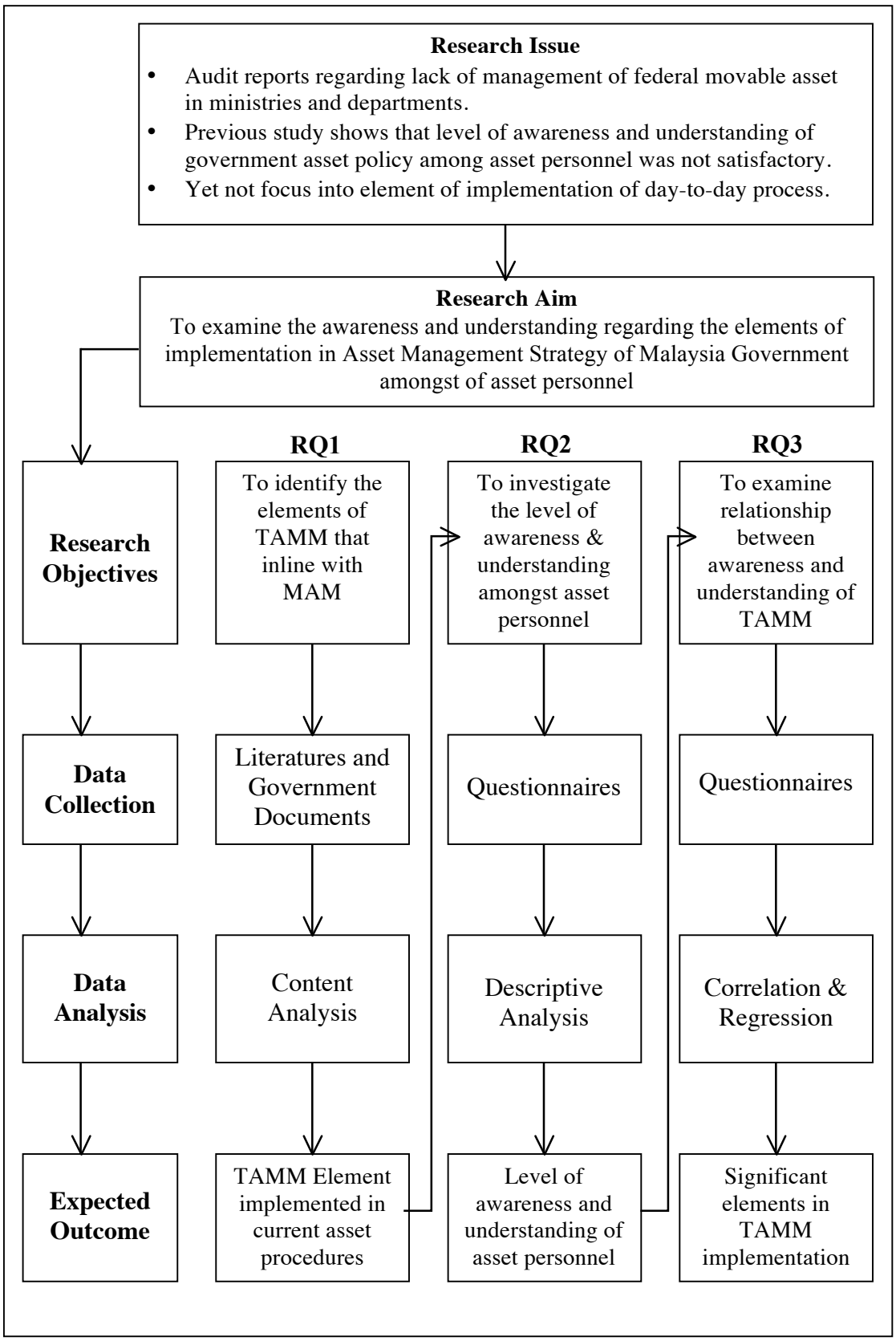


Figure 1.3: Research Design Framework

1.8 Limitation of Study

The study will be conducted within limited scopes, therefore some limitation do exist along the work. Some consideration was applied to this research to ensure the objectives are achieved. Follows are some limitation and assumptions:

1.8.1 Period of Study and Budget

The study was conducted within ten months from its initial proposal stage. Therefore, it is considered as initial project with relevant information focusing on achieving the objectives of the study. There is a very limited budget to run the project in full scale due to the facts that this study is only part of final year project for coursework of Master in Asset and Facilities Management.

1.8.2 Place of Study

This study was conducted to respondents in federal ministries and department's headquarters in Kuala Lumpur and Putrajaya only due to period of study and budget constraint. Though the data collection was retrieved from selected respondents within these areas, its finding can be generalised to all federal ministries and departments as they have same structure of command in their organisation.

1.8.3 Data Collection and Respondents of Study Assumption

For high validity data collection and data analysis purposes, only Asset Management Unit personnel was selected including the Asset Manager and Asset Operators. Due to budget and time constraints, the questionnaire was distributed

through email of each respondent. Therefore, some assumption has been developed for this study as follows:

(i) The willingness of respondents to give their generous evaluation towards every element in the questionnaire to achieve the objective of this study.

(ii) The respondent's credibility in giving the true evaluation, as it was email was used as medium of interaction between researcher and them.

(iii) Though pilot study was done before the questionnaire was distributed to the respondents, there will always doubt about the respondents ability to interpret the question well.

(iv) There might be a bias answer given by respondents during answering the questionnaire due to the influence of their immediate personnel in the organisation.

If the above scenarios exist, there is big probability that this study was exposed to the inevitable limitation. However, there was an effort during the analysis process that has been taken to ensure all the research objectives are not deteriorated.

1.9 Significant of Study

The international evidence has reported that there were significant gains in efficiency from strategic asset management implementation in organisation with the range between ten to thirty percentiles (Lyons, 2004), thus by implementing the GAMP and TAMM will help in improving the asset management practice (Yusof, 2013). This will inline with the aspiration of Y.A.B Tun Abdullah Ahmad

Badawi (2009) to nurture the first class mentality culture towards asset management with first class assets that has and will be provided to the nation. Therefore, this study will establish significant contribution to the movable assets management efficiency through these following subjects:-

1.9.1 Government of Malaysia

Outcome from this study will acknowledge the policy maker to embrace the holistic and systematic approach in managing assets and facilities focusing on strategic implementation elements that has been highlighted in TAMM. Furthermore, by acknowledging the area of improvement, Government will have basis to introduce new approach to increase the awareness and understanding of government officer to manage the asset in the most effective way. This will help to reduce repeated mistake that has been reported by auditors and help creating positive image regarding the management of people money. Gradually, the culture of continuous improvement in federal asset management organisation will be nourished.

1.9.2 Federal Ministries and Departments

One of the objectives of this study is to look into the level of awareness and understanding of TAMM to all federal ministries and departments, which may lead to a significant outcome for a significant agency looking into significant areas of improvement. Therefore, the agency could develop proper plan to tackle the issues in promoting the culture change towards better asset management. Thus, the effectiveness level of implementing TAMM in the organisation will escalate with significant reduce of audit queries on asset management. This will help the agency improving their KPI and strive for five star rating for good governance under A.I. This will spread good culture in organisation to share same knowledge with dynamic attitude to change.

1.9.3 Body of Knowledge

There are so many references of literature reviews about property and infrastructure assets by researchers especially in Malaysia but little has come to look into movable asset management. Besides more researches can be done regarding federal or central government assets management especially that has a significant contribution to national interest such as military assets and life-saving assets. Though this study was conducted as a master project, it hopes to open doors to extensive research that has added value for body of knowledge of asset management particularly in integration of people, process and technology towards managing the bottom three aspects of sustainable life known as economy, social and environment.

1.10 Chapter Outline

Briefly, the writing method for this study has been arranged so that it will give flow of idea and information to potential researchers. The structure of this study and brief of every chapter are as follows:

1.10.1 Chapter 1 - Introduction

This chapter will give an overview regarding the study work, which includes the main issues of the research and how the problem statement was developed from those issues. It also indicates what are the objectives of the study and what variables have been chosen for the study. There also include the scope, limitation and also why does the study is significant to be carried out.

1.10.2 Chapter 2 – Literature Review

In this chapter, theories and concepts of asset management and strategic assets management was discussed taken from previous researches that has been done. The explanation of the concepts will include its definitions, functions, method used, scope of study, elements of study and findings. It also will explore relevant study regarding the effective organisations, change management, knowledge management and culture management that related to the topic of study. Within the same chapter, documents review was done on the GAMP, TAMM and Malaysia Treasury Circulars to understand its relationship between policy documents and procedure in managing government movable asset. Factors from strategic implementation elements will be retrieved and being compare with the movable assets management.

1.10.3 Chapter 3 – Research Methodology

The main agenda of this chapter is to further clarify on how does this study will be carried out. This chapter will explain on the research design what type of study is used, how samples were chosen, what variables were involved and how it should be measured. It also explained on the pilot study done to test the reliability of the questionnaire. Next it would explain about method used to collect the data from respondent and how it is going to be retrieved and analyse. All these activities were put into three procedures that represent each research question.

1.10.4 Chapter 4 – Data Analysis and Findings

The main objective of this chapter is to elaborate the findings from related methodology that has been presented in previous chapter whether it has achieved the objective of the study. The findings were also supported with relevant academic

literature reviews, which have been discussed in Chapter 2 as part of evidence in research work.

1.10.5 Chapter 5 – Discussion, Conclusion and Recommendation

All finding from previous chapter will be discussed academically whether it fulfil or not the objectives of this study. Conclusion will be based exactly on the finding and recommendation will be developed for further research to enhance any weaknesses found in the study.

1.11 Summary

In summary, this chapter briefly explains why the study needs to be performed by understanding the key issues regarding awareness and understanding level of TAMM implementation strategy in MAM. The problem statement indicated that people awareness and understanding towards implementation of asset management strategy should be first to explore. Therefore, three research objectives and questions were developed to define the needs of the study. There was also a very concise explanation regarding research scope and research design that will further explained in the next chapter. This chapter also indicated some limitations and assumptions used during conducting the research and explained why the study is significant to federal government, individual federal ministries and departments and also its contribution to body of knowledge. Finally this chapter highlighted how the final report was written.

REFERENCES

Abdullah, S., Abdul Razak, A., Hanafi, M. H., & Salleh, M. N. (2011). Managing Government Property Assets: The Main Issues From The Malaysian Perspective. *Journal of Techno-Social*, *3*(1).

Alamsjah, F. (2011). Key success factors in implementing strategy: middle-level managers' perspectives. *Procedia-Social and Behavioral Sciences*, *24*, 1444-1450.

Amadi-Echendu, J. E., Willett, R., Brown, K., Hope, T., Lee, J., Mathew, J., Vyas, N & Yang, B. S. (2010). *What is engineering asset management?* (pp. 3-16). Springer London.

Atkinson, H. (2006). Strategy implementation: a role for the balanced scorecard?. *Management Decision*, *44*(10), 1441-1460.

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, *61*(8), 1139-1160.

Berahim, N., Jaafar, M. N., & Razali, M. N. (2013) A Review On The Principle Of Governance In Asset Management To Enhance The Performance Of Local Authority In Malaysia. *Proceeding of the Global Conference on Business, Economics and Social Sciences.*

Berg, B. L. (1989). An introduction to content analysis. *Qualitative Research Methods for the Social Sciences, Allyan & Bacon*.

Bertram, D. (2007). Likert scales. *Calgary, Alberta, Canada: Retrieved May*, *18*, 2012.

Bloom, B.S. and Krathwohl, D. R. (1956) *Taxonomy of Educational Objectives: The Classification of Educational Goals, by a committee of college and university examiners. Handbook I: Cognitive Domain.* NY, NY: Longmans, Green

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal*, *9*(2), 27-40.

Brunetto, Y., Xerri, M., & Nelson, S. (2013). Building a proactive, engagement culture in asset management organizations. *Journal of Management in Engineering*.

Bryson, J. M. (2004). What to do when stakeholders matter: stakeholder identification and analysis techniques. *Public management review*, *6*(1), 21-53.

Bryson, J. M., Crosby, B. C., & Bryson, J. K. (2009). Understanding strategic planning and the formulation and implementation of strategic plans as a way of knowing: the contributions of actor-network theory. *International Public Management Journal*, *12*(2), 172-207.

Burns, P. (2002), Implementing Strategic Asset Management. APWA International Public Works Congress, Kansas City

Chua, Y. P. (2006). Kaedah dan statistic Penyelidikan: Asas Statistik Penyelidikan Buku 2. *Selangor: McGraw-Hill (Malaysia) Sdn. Bhd*.

Cooksey, S. R., Jeong, D. H. S., & Chae, M. J. (2010). Asset management assessment model for state departments of transportation. *Journal of Management in Engineering*, *27*(3), 159-169.

Deinstadt, D. C. (2005). Asset management: the big picture. *Healthcare financial management: journal of the Healthcare Financial Management Association*, *59*(10), 86-8.

Efe, K., Raghavan, V., & Choubey, S. (2009, December). Simulation modelling movable hospital assets managed with rfid sensors. In *Winter Simulation Conference* (pp. 2054-2064). Winter Simulation Conference.

El-Akruti, K., Dwight, R., & Zhang, T. (2013). The strategic role of engineering asset management. *International Journal of Production Economics*, *146*(1), 227-239.

Finstad, K. (2010). Response interpolation and scale sensitivity: Evidence against 5-point scales. *Journal of Usability Studies*, *5*(3), 104-110.

Frolov, V., Ma, L., Sun, Y., Bandara. W. (2010). *Identifying Core Functions of Asset Management.* Springer.

General Audit Office (2009). *Auditor General Report*. National Audit Department, Malaysia Government.

General Audit Office (2010). *Auditor General Report*. National Audit Department, Malaysia Government.

General Audit Office (2010b). *Activities of The Federal Ministries / Department and Management of The Government Companies.* National Audit Department, Malaysia Government.

General Audit Office (2011). *Auditor General Report*. National Audit Department, Malaysia Government.

General Audit Office (2011b). *Activities of The Federal Ministries / Department and Management of The Government Companies.* National Audit Department, Malaysia Government.

General Audit Office (2012). *Auditor General Report*. National Audit Department, Malaysia Government.

General Audit Office (2012b). *Activities of The Federal Ministries / Department and Management of The Government Companies.* National Audit Department, Malaysia Government.

General Circular No 1 Year 2009, Prime Minister Department, Malaysian Government.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). Multivariate data analysis
(7th ed). New Jersey. Pearson Prentice Hall.

IFAC–IPSASB, I. P. S. A. S. (2000). 17: Property. *Plant and equipment, IFAC, New York*.

International infrastructure management manual. NZ National Asset Management Steering Group, Association of Local Government Engineers New Zealand, 2000.

Jolicoeur, P. W., & Barrett, J. T. (2005). Coming of age: Strategic asset management in the municipal sector. *Journal of Facilities Management*, *3*(1), 41-52.

Kemper, E. A., Stringfield, S., & Teddlie, C. (2003). Mixed methods sampling strategies in social science research. *Handbook of mixed methods in social and behavioural research*, 273-296.

Kohtamäki, M., Kraus, S., Mäkelä, M., & Rönkkö, M. (2012). The role of personnel commitment to strategy implementation and organisational learning within the relationship between strategic planning and company performance. *International Journal of Entrepreneurial Behaviour & Research*, *18*(2), 159-178.

Lampe, M., Strassner, M., & Fleisch, E. (2006). RFID in movable asset management. In *Ubiquitous and pervasive commerce* (pp. 53-71). Springer London.

Laue, M., Brown, K., Scherrer, P., & Keast, R. (2014). Integrated strategic asset management: frameworks and dimensions. In *Infranomics* (pp. 75-87). Springer International Publishing.

Lipton, P. (2001). What good is an explanation?. In *Explanation* (pp. 43-59). Springer Netherlands.

Lloyd, C. (Ed.). (2010). *Asset management*. Thomas Telford.

Lutchman, R. (2006). *Sustainable asset management: linking assets, people, and processes for results*. DEStech Publications, Inc.

Lutchman, R. (2011). *Creating and managing sustainable organizations*. DEStech Publications, Inc.

Lyon, S.M. (2004). Towards Better Management of Public Sector Assets. HM Treasury: London.

Maheshwari, A. (2006). Development of a Strategic Asset Management Framework. In *Engineering Asset Management* (pp. 596-605). Springer London.

Mahmood, M. N., Dhakal, S., Wiewiora, A., Keast, R. L., & Brown, K. A. (2012). Towards an integrated maturity model of asset management capabilities. In*Proceedings of the 7th World Congress on Engineering Asset Management*. Springer London.

Mardiasmo, D., Tywoniak, S., Brown, K., & Burgess, K. (2008, November). Asset management and governance—an analysis of fleet management process issues in an asset-intensive organization. In *Infrastructure Systems and Services: Building Networks for a Brighter Future (INFRA), 2008 First International Conference on* (pp. 1-6). IEEE.

Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic management journal*, *7*(3), 233-249.

Misnan, M. S., Mohd Yusof, Z., Mohamed, S. F., & Othman, N. (2012). Government Staffs Readiness On The Implementing Of The Government Asset Management Policy.

Naoum, S. G. (2012). *Dissertation research and writing for construction students*. Routledge.

Ng, L. C. (2011). Best management practices. *Journal of Management Development*, *30*(1), 93-105.

O'Leary, Z. (2013). *The essential guide to doing your research project*. Sage.

Okumus, F. (2003). A framework to implement strategies in organizations. *Management Decision*, *41*(9), 871-882.

Onwuegbuzie, A. J., Bustamante, R. M., & Nelson, J. A. (2010). Mixed research as a tool for developing quantitative instruments. *Journal of Mixed Methods Research*, *4*(1), 56-78.

Pallant, J. (2007). SPSS Survival Manual: a step by step guide to data analysis using SPSS for windows third edition (version 15). Open University Press, Mc Graw Hill.

PAS 55 – 1 Asset Management Part 1 and 2, The Institute of Asset Management, 2004

Pearce, J. A., & Robinson, R. B. (2000). *Strategic management: Formulation, implementation, and control*. Irwin/McGraw-Hill.

Perls, F, Hefferline, F. R, & Goodman, P. (1951). Gestalt Therapy: Excitement and growth in the human personality. London: Guerney Press

Pietrabissa, A., Poli, C., Ferriero, D. G., & Grigioni, M. (2013). Optimal planning of sensor networks for asset tracking in hospital environments. *Decision Support Systems*, *55*(1), 304-313.

Preston, C. C., & Colman, A. M. (2000). Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences. *Acta psychologica*, *104*(1), 1-15.

Radu, D., & Marius, D. (2011). Issues related to the accounting treatment of the tangible and intangible assets depreciation. *Annals of the University of Oradea: Economic Science*, *1*(2), 498-502.

Reinhardt, W., Mletzko, C., Sloep, P. B., & Drachsler, H. Understanding the meaning of awareness in Research Networks. *Editorial: Awareness and Reflection in Technology Enhanced Learning*, 13.

Saleh, Z., & Pendlebury, M. W. (2006). Accruals Accounting in Government--Developments in Malaysia. *Asia Pacific Business Review*, *12*(4), 421-435.

Samad, S. A. (2007). Critical issues in managing government's assets & facilities in Malaysia". In *Proceeding of the National Asset and Facilities Management (NAFAM) Convention, Kuala Lumpur, Malaysia* (Vol. 13).

Saunders, M. N., Saunders, M., Lewis, P., & Thornhill, A. (2011). *Research methods for business students, 5/e*. Pearson Education India.

Schneider, J., Gaul, A. J., Neumann, C., Hogräfer, J., Wellßow, W., Schwan, M., & Schnettler, A. (2006). Asset management techniques. *International Journal of Electrical Power & Energy Systems*, *28*(9), 643-654.

Sekaran, U. (2010). *Research methods for business: A skill building approach 5th Ed*. John Wiley & Sons.

Shah, S. K., & Corley, K. G. (2006). Building Better Theory by Bridging the Quantitative–Qualitative Divide*. *Journal of Management Studies*, *43*(8), 1821-1835.

Stapelberg, R. F. (2006). Professional Skills Training in Integrated Asset Management: How to Develop and Implement the Essential Organisational Asset Management Functions. In *Engineering Asset Management* (pp. 1243-1251). Springer London.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, *2*, 53-55.

Treasury of Malaysia (2007). *Movable Asset Management Procedure* - Circular No.5 Year 2007. Ministry of Finance, Malaysia Government.

Treasury of Malaysia (2013), *Asset Management Report 2013*. Ministry of Finance, Malaysia Government.

Tywoniak, S., Rosqvist, T., Mardiasmo, D., & Kivits, R. A. (2008). Towards an integrated perspective on fleet asset management: engineering and governance considerations.

University of Leeds (2006). Improving Property Assets Management in the Central Civil Government Estate, April 2006.

Van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard*, *16*(40), 33-36.

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Ascd.

Woodhouse, J. (2006, December). Putting the total jigsaw puzzle together: PAS 55 standard for the integrated, optimized management of assets. In*International Maintenance Conference*.

Woodhouse, J. (2014). Briefing: Standards in asset management: PAS 55 to ISO 55000. Infrastructure Asset Management, Volume 1, Issue 3, 57 –59.

Yang, L., Sun, G. H., & Eppler, M. (2009). Making strategy work: A literature review on the factors influencing strategy implementation. *Handbook of research on Strategy Process*, 165-181.

Yusof, Y. (2013). *The effectiveness of public sector asset management in Malaysia*. Queesnland University of Technology.

Zheng, W., Yang, B., & McLean, G. N. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*, *63*(7), 763-771.