

# IPN Journal *of* Research and Practice *in* Public Sector Accounting *and* Management

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Challenges for the Public Sector Auditors**

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for Public Sector Accounting**

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## **Changing Accounting System: Challenges for the Public Sector Auditors**

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### **Abstract**

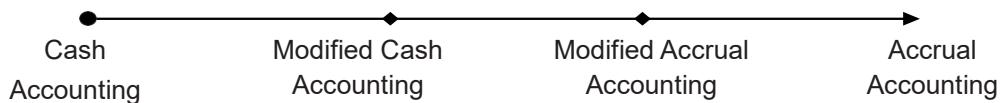
Changing global environment has urged for public sector reforms towards efficiency and competitiveness. Among others is the shifting of accounting system from cash-based to accrual-based accounting in the government which was seen as crucial in the public sector reforms. In that light, this paper reviews the developments that has taken place in the Malaysian public sector accounting and discuss the changing of accounting system for the public sector auditors from the National Auditing Department (NAD). Implications of accrual accounting system on NAD and government's organizations as well as suggestions to implement accrual accounting system are also discussed. This paper addresses the need for government, NAD and audit profession to have concerted efforts in the implementation of appropriate accrual accounting system for the public sectors. These efforts could speed up achievement of best Malaysian governmental accounting system which assists in best evaluation and decision making, attributes of public sector reforms.

### **Introduction**

Public sector reform towards enhanced efficiency, effectiveness and accountability of public service delivery has been global phenomena nowadays. Norman (1995) wrote that governmental accounting has taken vital role in the reform. Accounting plays an important role as the means to measure and documents achievement, and the language of accountancy is negotiated to assume similar role in public service organization (Lapsley, 1999). Significant accounting reforms had been taken place in many countries in tandem with the public sector reforms (Guthrie, 1999). Parts of the changes include moving from traditional cash accounting to the business model of accrual accounting.

Pollitt and Bouckaert (2004, Table 4.3, p. 71) reports a pattern of budgetary reform which begins with a traditional cash based accounting system followed by a shift to the double entry bookkeeping with elements of cost analysis, modified cash or modified accrual basis, and later the application and development of full accrual accounts which emphasized on information related to performance. Baker & Rennie (2006) have classified the government accounting systems range from cash to accrual accounting that shown in Figure 1. This spectrum consists

of four points including cash, modified cash, modified accrual, and full accrual accounting.



**Figure 1: Accounting System Spectrum, adapted from Baker and Rennie (2006)**

Cash accounting system has been predominantly applied in the public sector in the past. However, lots of changes or reforms happened in the public sector that urges the change towards the adoption of accrual accounting internationally. The definition of accrual accounting forwarded by the International Public Sector Accounting Standard (IPSAS) is that transactions and/or business events are recognized when they take place, regardless of cash involvement. This means that transactions and business events be recorded and recognized in the period which it occurs and reported in the financial period pertaining to that period although cash have been ( or will be) considered during the previous period (or future period).

The shift towards comprehensive public accrual accounting started in the late 1980's, with New Zealand being the first sovereign nation to adopt public sector accrual accounting (Pallot & Ball, 1997). Funnel and Cooper (1999) wrote that Australia has also been among the first few countries to assume the accrual accounting techniques for its public sector. The United Kingdom's public sector fully implemented accrual accounting in 1998/99 (Henly et al, 1986) although NHS Trusts have started applying accrual accounting methodologies in 1992. In 2004, a third of the member counties of Organisational for Economics Co-Operation and Development (OECD) had adopted accrual accounting for reporting (Blondal, 2004).

The introduction and acceptance of accrual accounting and financial reporting in the public sectors of many countries throughout the world does not come easy. There have been a voluminous debate in support and against the accrual basis either wholly or as part. The implementation of accrual accounting is undeniable will also affect the audit practices of the NAD and external auditor profession in Malaysia. This paper records the account of accrual accounting adoption for the public sector in Malaysia and challenges the auditing profession faced.

### **Development of Governmental Accounting in Malaysia**

During the years before Programme Performance Budgeting System (PPBS) was introduced in 1969, Malaysia adopted a line item budget or Traditional Budgeting System (TBS) that focusing on inputs or objects of expenditure. The system emphasized 'control, conformity with rules, and the legality of expenditure' (Dean, 1989). TBS basically focuses on extrapolating past spending levels into the next year and incrementing the level for inflation on new programmes or projects (Abdul Rauf et al., 2003). PPBS started 1969 with the objectives

of supporting the government officials and administrator to plan based on the most efficient and economical ways of achieving objectives of government programmes and to establish priorities in budgeting for competing programmes (Dean, 1989). The success of PPBS was however hindered by incompatibilities between accounting and budgeting systems, difficulties in determining programme structures and performance measurement, low management commitment as well as unskilled human resources (Dean, 1989).

In 1990, the Malaysian Budgeting System (MBS) also known as the Modified Budgeting System was introduced through Treasury Circular No. 11 and implemented in phases to cover all government ministries and departments by 1995. The MBS mandated that programme evaluations be conducted on a particular programme component at least once in a period of five years. The objective of MBS is to improve allocation of resources to government programmes and strengthen mechanism for the accountability of controlling officers and programme managers.

Government of Malaysia later introduced Micro Accounting System (MAS) in 1992 which adds more information than those produced through MBS- cash based accounting system. The MAS is similar to activity-based-costing which its objective to determine the cost of outputs produced by Government departments. Thus, in calculating total cost of an output, identification of all the resources used to produce the particular output is necessary which then the activity costs be determined and the cost of output be consolidated.

Standard Accounting System for Government Agencies (SAGA) was introduced and launched in 1996. This was computerized accounting package that introduced for the statutory body in Malaysia based on accrual accounting basis. The main purpose of SAGA is to ensure that the accounts of the Statutory Bodies are being updated daily and submitted in time for auditing purposes. (Abdul Rauf et al., 2003). The systems enable the local authorities, statutory bodies and public enterprises to use accrual basis to prepare their accounts.

The government of Malaysia is also considering introducing the accrual basis to account for the federal and state government activities. In view of the increasing adoption of accrual accounting basis in the public sector in the world and the advantages of accrual accounting, the government accounts will have to be compelled by circumstances to implement accrual basis. We will examine the advantages and disadvantages for the adoption of the accrual accounting basis in the public sector in the next sessions.

### **Opportunities and Challenges of the Accrual Accounting in the Public Sector**

The adoption of accrual accounting and financial reporting in the public sector offers many advantages. First, it is argued that the adoption of accrual accounting will enhance transparency, both internally and externally in the public sector (Boxall, 1998). Mellor (1996) argued that the use of accrual basis gives a complete picture of the government's financial position, disclosed

the impact of policy over the long term, focuses attention on the management of total resources and obligations, and increases integrity of financial reporting. Accrual accounting provides a more comprehensive accountability framework than the cash basis. For example, New Zealand has gone further than any other nations in devising systems of measuring compliance and monitoring accountability when it adopted the accrual basis. The output based management and budgeting under the accrual system can provide comprehensive information and effective performance measurement that lead to accountability of management within government agencies over their actions and decisions (Ball et al, 1999).

Accrual accounting also provides more information to managers, the Parliament and the public, hence increasing the quality of overall decision making. Full cost information that captured under the accrual basis supports more effective decision making for the government. The management accounting purpose of accruals accounting is supported by Robinson (1998) who argues that the need for information on the full cost provided by accruals accounting serves the purposes of performance monitoring. Accrual accounting allows for more effective and efficient use of resources, especially regarding capital assets. It allows for a distinction to be made between capital and operating expenditures. Accrual accounting can match the cost of the asset to the benefits being received and forces the government to keep detailed asset registries (Pallot & Ball, 1997). It enables the government to match real economic costs with the outputs being achieved and leads to better evaluation of performance (Evans, 1995).

The accrual basis allows the comparison from year to year and with the private sector. By using accrual accounting for financial reporting purposes, the government can compare itself against the private sector for performance measurement and outsourcing purposes (Pallot & Ball, 1996). This comparison leads to greater efficiency because it gives the government a credible alternative service delivery mechanism (Carlin, 2005) through outsourcing to private sectors if the private sector can perform the task more efficiently. Lastly, accrual accounting establishes effective performance measurements for the government agencies. Accrual accounting allows for the analysis of overall goals, objectives and costs of service. The ability to analyze the outcomes of various departments, projects and initiatives will lead to increased accountability over the quality, quantity and cost of inputs being used (Pallot & Ball, 1996). Information generated from accrual basis is important in assisting government and other users to assess the financial condition and performance of government.

While much of the literature suggests benefits that can be attached to accrual accounting, its adoption as a basis of accounting also has some drawbacks. First, it introduces more subjectivity into the accounts. Although its subjectivity is not boundless because of the audit function and accounting standards, it can be misused to distort accounting information rather than provide a fairer picture. As a result, this may undermine the objectivity of financial statements. Many authors argued that accrual basis may distort the objectives of financial reporting for the public sector in which it could cause poor decisions in resource allocation and investment rather than improving the accuracy and usefulness of cost estimates (Carlin, 2005).

Accrual accounting practices in public sector demand higher administrative and accounting costs. The adoption and implementation of an accounting system across the public sector requires significant effort and resources. The public sector has to increase the number of financial managers qualified as accountants, and to provide more financial management and accounting training to the existing staff (Hepworth, 2003). These would obviously add to the administrative cost for the public sector.

Hepworth (2003) had set out some preconditions to implement the accrual accounting. The following preconditions may serve the guidelines for Malaysia public sector to implement the accrual accounting:-

- Consultation and acceptance are necessary to implement the system. The employees and management must be willing to recognize and accept the benefits that changes will bring about and prepare culturally for changes;
- The reforms require increase number of finance managers who may be a qualified accountant to be employed;
- Cooperation by accountancy body in the development of accounting standards and involve in the application of this standards;
- A comprehensive training for line managements to understand the accrual accounting are essential;
- There must be no system corruption and the rules specified in the system must be fully complied;
- The reform need widespread support across the government bodies as it would take times to introduce and implement the system;
- IT capacity must be able to support and respond the new requirements that introduced by the accrual system;
- A comprehensive and annual independent audit of the accounts is essential and cannot be compromised; and
- The introduction of accrual accounting and budgeting should be seen as part of the wide ranging process of reform.

In addition, Lüder's contingency model had been used to explain why changes in governmental accounting take place (Lüder, 1992). The model suggests that accounting innovation can be traced to stimuli such as politicians, administrators and the public that can affect the attitudes and behaviour of users and producers of accounting information. The model also identified the stimuli for change in Lüder (1994) such as fiscal stress, financial scandal or some dominant doctrine. Implementation barriers for governmental accounting include the legal system, the size of jurisdiction and availability of qualified staff.

Saleh (2007a) in their study on the perceptions of the government's accountants and auditors, policy makers and other professional accountant in terms of the factors that have contributed to the development of the Malaysian governmental accounting, found that:

- Financial crisis did not result any changes in the development of accrual;
- The Treasury, including the Accountant General's Department (AGD), played major roles to initiate the changes in the development of governmental accounting in Malaysia;
- AGD should be the standard setter as the accrual accounting would require a different set of accounting standards than the current Treasury Instructions and Circulars;
- Changing the legal requirements would not be a great obstacle to change the accounting system;
- International pressures and professionalism were not perceived to be major factors in the development of Malaysian governmental accounting; and
- Accrual accounting is seen to be relevant to governmental accounting but indicate that the possibility of adopting accrual accounting in Malaysian governmental accounting in the very near future.

The study of these factors is important as it would indicate whether the Malaysian government should implement the accrual accounting practice. These findings can be served as guidelines for government before implementing the system.

### **Challenges to the National Audit Department**

According to Article 106 of the Federal Constitution, the Auditor General has the powers and duties to audit and report on the accounts of the Federal and States. The NAD of Malaysia is entrusted to ensure the existence of accountability in the administration and management of public funds through the audit of accounts and activities of the government agencies. The change of the accounting system to accrual accounting would result in the reform of the NAD and impact on their audit scope.

The scope of audit, audit procedures and audit objectives would be changed after the implementation of the accrual accounting. The accounting standard that used by the government agencies would be quite similar to the private sectors after the change. In fact, the government intends to use fair value concept to reflect the true situation of the government agencies (National Audit Department, 2006). Hence, NAD auditors must also understand fully the new requirements of IFRS in the process of auditing (National Audit Department, 2007a). Therefore, a detailed audit plan and substantive audit evidences may be required especially in the first time adoption of the accrual accounting in the financial statements.

Moreover, additional audit objectives should be developed for the accrual accounting system such as evaluation of a new computer system installed, existence of the assets, the right and obligation for the liabilities, the certification of memorandum trading accounts or a provision of stock certification (Jones & Bates, 1990). In short, the NAD officers should gain an in-depth knowledge on the accrual accounting system in order to develop the suitable audit objectives, audit procedures and audit programme.

In view that accrual accounting establishes effective performance measurements for the government agencies, the NAD should devise a new audit programme and audit plans to analyze and identify the key features of the new performance measurement and the new benchmarks for performance in the organizations, programmes and projects that to be examined (Sherer & Turley, 1991). During the Symposium of Auditing Management in Water Industry 2009, the Audit General proposed that the investment and expenditure on the water industry should be incurred on the basis of value for money and avoids any unnecessary wastage in view of the increasing cost incurred by the government and limited budget (National Audit Department, 2009). Value of money is achieved when a public body carries out its duties to high standards at low costs (Henley et al., 1986). Hence, the audit should focus on the value for money in the Malaysian public sectors that had been practiced by other jurisdictions.

Another issue on which the NAD should focus is assets and liabilities valuation. Moving to full accrual accounting means that each government department has to identify and value its assets and liabilities and bring them into a balance sheet. To ensure that all properties of the Malaysian mission offices are properly maintained, the NAD needs to carry out yearly physical inspections of all buildings and facilities that require structural, electrical and mechanical maintenance (National Audit department, 2009).

To move towards the accrual accounting system, the accounting and management information system may need to be changed. The accounting system has to be specially tested by the NAD. This involves the auditor in reviewing the general and application control of the system to ensure that the new systems maintain the integrity and security of the information. The NAD may need to consider the controls over the data centre and network operations, access security, data capture control and output controls. The auditor would need to assess his evaluation of internal controls on the new system (Jones & Bates, 1990). Auditors can use the Computer Assisted Audit Techniques and Tools (CAATTs) to facilitate the implementation of the audit procedures. The audit techniques include auditing around the computer, auditing through the computer and auditing with the computer (National Audit Department, 2006).

Furthermore, auditors need to acknowledge changes after the implementation of accrual system in reaching their conclusions and arriving audit opinion. Such considerations will help them to exercise audit judgment as well as avoid poor outcome result from the risks not carefully assessed and insufficient planning. The NAD should take initiative to develop good practice guides and produce wider range of reports and advice. In addition, they should encourage consultation by establishing new forms of accounts or reports. They can also play a role as a consultant. They can provide recommendations in his arrangements, provide specific advices

to agencies that seek for assistances and promote the formation of management structures dedicated to improved performance (Jones & Bates, 1990). They have part to play a wider role in the implementation process.

### **Challenges to the Auditing Profession**

In Malaysia, external auditor is not appointed by the government to audit the accounts. This scenario is different from other jurisdictions. In the UK, the Local Government Finance Act 1982 gives the Audit Commission the duty to appoint the external auditor to each local authority (Jones & Pendlebury, 2000). Saleh (2006) indicates that the Malaysian professional accounting bodies have not showed interest in the development of governmental accounting. Professional bodies only dealt with accounting in the private sector. Lüder (1992) had indicated that the professional bodies are in favour of applying the private-sector accounting treatment in the public sector. When the central government in the UK introduced accrual accounting in 2000, one of the major costs is the increased cost of employing professional accountant (Connolly & Hyndman, 2005) because government has only few qualified accountant due to the simplicity of the cash accounting system implemented in the past. Therefore, there will be higher demand for the professional accountants in the Malaysia public sector if accrual system is implemented.

One of the advantages to adopt accrual accounting in the public sector that we highlighted above is it enhances transparency and accountability in the public sector. In the UK public sector, the appointment of external auditor aims to increase the effectiveness of audit, particularly in the pursuit of value for money. In the UK public sector, an external audit is intended first to provide an assurance as to the reliability of the published accounts. Second, it intended to provide further assurance as to the regularity of the underlying transactions. Third, it aims to provide an assessment of the efficiency and effectiveness in the central and local government sectors (Henly et al. 1993). Thus, external auditor is able to provide these assurances and assessments from the standpoint from outside party as they are independent and impartial in the public view.

The developments of the public sector accounting will influence the audit objectives, approach, methods and techniques that adopted in the NAD. The NAD would not have many resources or expert to develop the new audit approaches and programmes that tailor to the accrual accounting. Working with the external auditors would resolve this issue. External auditor with wider experience, of course, will familiar in auditing the accounts that adopt accrual principle. The external auditors have a part to play in the wider education process. Advice and assistance by the auditor will often be needed in implementing accrual system, without compromising audit independence and reporting freedoms (Sherer & Turley, 1991). During the Seminar on Internal Audit, the Auditor General viewed that the internal auditor and external auditor can collaborate with each others. As external auditor focus on the sampling method that do not

cover all the aspects in the public sector, the internal auditor can help the external auditor to communicate any internal control deficiencies or material misstatements to relevant person in charged in the public sectors. This would help the government to resolve weaknesses that highlighted in the audit report (National Audit Department, 2007b). Hence, collaboration with the government internal auditors is important to audit the public sector accounts.

## Conclusion

Countries around the globe have increasingly in support for and adopted full accrual accounting for their public sector for the prevailing advantages accounted by developed countries pioneered the accrual basis. Without exclusion, Malaysia government had pulled all resources and effort to move forward with accrual accounting. Various researches have suggested that adoption of accrual accounting can lead to the accountability and transparency in the accounts. Moreover, the full cost information allows for a better decision making and better measurement on the government agencies performance. However, its adoption as a basis of accounting also has some drawbacks such as the subjectivity of the accounting information and the increasing cost of moving to the new system. Accrual accounting would be successfully implemented should a whole series of preconditions be made available. Hence, a comprehensive review and survey to explore the factors that influence the implementation of the accrual system in Malaysia is necessary.

Public sector accounting evolution would undoubtedly influence the NAD. Changes in accounting system may affect audit objectives and audit scope. The new government initiatives require audit to emphasize more on the performance measurement, fair valuation of assets and the information technology audit. To support the newly evolved functions, additional training is vital for the NAD staffs to update their skill and knowledge on the accrual accounting, government initiatives and the relevant audit approach. External auditor is proven to have the ability to support the process of implementation of efficient accounting system in the public sector and effective public sector administration (Abu Hasan, 2010). Effective external audit in the public sector would further enhance the credibility and transparency of the financial reporting which have been accounted in the public sector of other jurisdictions. In view of the advantages derived from accrual accounting system, the government, NAD and audit profession should make concerted efforts to support the implementation of appropriate accrual accounting system for the public sectors.

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## Data Mining Technology: An Opportunity for Public Sector Accounting

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### Abstract

This paper discusses the opportunity for Malaysian public sector to increase efficiency and effectiveness through the utilisation of data mining technology. Few studies have investigated the implementation of data mining technology in Malaysia. These studies have been within the private sector. However, in the public sector there have not been any. A data mining utilisation model is constructed combining information and communication technologies (ICT), knowledge management (KM), data warehousing (DW) and data mining (DM) for application in the Malaysian public sector and the benefits of adopting such a model are considered.

**Keywords:** Data mining; Data warehousing; Information and communication technologies; Knowledge management; public sector accounting.

### Introduction

Over the years, there has been widespread change in the adoption and utilisation of new technologies in both the private and public sectors. Data mining technology is one of the new technologies that have become increasingly popular. It is *the process adopted to undertake a thorough analysis of the data, in particular financial data, available to the firm to select the information (identifying patterns and relationships amongst data) to allow the provision of information required by users and, in so doing enhance information available to the decision-making process. A data mining approach will use a variety of technological techniques and tools to explore (summaries, comparison, analysis, forecast, estimate) the data.* Nowadays, data mining technology becomes an important business tool for a private sector. While in a public sector, among others data mining is used in audits and investigation of government's project and programs, and fraud prevention and detection.

### Background

Technology has allowed the production and storage of vast amounts of information. Added to this, information has become a key resource in today's business world and an ability to effectively manipulate information has become vitally important to management. It is of

concern to organisations to identify approaches to critically analyse information in order to improve decision making. In the business world for example, information obtained from market segmentation, customer profiling, trend forecasting and cross-selling can help decision makers to learn more about their customers. In the public sector, information obtained from similar activities helps in understanding client needs and identifying how to improve delivery systems. Technology provides the key to collating, classifying and manipulating this vast repository of information.

One of the systems which collates and classifies data collected by organisations is the Accounting Information System (AIS). This system provides financial information that can be used to plan, evaluate and diagnose the impact of operating activities and identify the financial position of the organisation. Given that organisations today collect vast amounts of data, this data can be 'intelligently' analysed by data mining technologies - sophisticated and powerful cutting-edge technology that enables the extraction of hidden predictive information from a large database (Kurt, 2004).

Data mining technology is relatively new and requires awareness of the technology, readiness to implement it, and appropriate skills for its effective usage to be developed. Awareness and readiness in accepting this new technology is an important issue. The user of any new technology will act as a primary player in utilising the technology to the best advantage of the firm. The AIS which provides input for the decision making process would benefit from the features offered by data mining technology. The role of the AIS has become increasingly important with rapid change in technology which has created new information alternatives that may assist and change the way decisions are made. The AIS benefits from the use of information technology, therefore, accountants and other stakeholders who relate to the AIS need to be aware of the opportunities arising with technological advances and acknowledge that the technologies will influence their decisions. Data mining provides a methodology for problem solving, analysis, planning, diagnosis, detection, integration, prevention, learning and innovations (Hedelin & Allwood, 2002, Liao, 2003).

Data mining is capable of answering questions about the past (what has happened), the present (what is happening), and the future (what might happen) (Nemati & Barko, 2002). Data mining and other technology such as data warehousing, database marketing, and statistical sales analysis are a few information and communication technology (ICT) tools which give more capacity for the organisation to integrate and access their history or knowledge. Data mining permits analysis and identification of "hidden" relationships in large datasets. By permitting this, the previously uncovered information is now discovered and available to provide more support in the process of decision making. Carlson (1999) claims that ICT can increase productivity, facilitate changes and improve workforce abilities. Data mining is a part of ICT extensively used in many applications within industries particularly in the enhancement of organisational intelligence and decision-making and contributes towards making the organisation more agile.

A number of studies have been undertaken to identify the reasons corporations choose to adopt or not adopt data mining techniques and to identify their status in implementing such technologies (Chang *et al.*, 2003, Nemati & Barko, 2003, Wah & Abu Bakar, 2003). Literature on data mining adoption in organisations in various countries indicates that variables such as organisational size, culture, attitude to data resource and style of decision making can play a role in adoption decisions (Chang *et al.*, 2003). Other variables identified as influencing the decision to adopt include structure, strategy, management systems, human capital, technological factors, and competitiveness of outside environment (Spanos *et al.*, 2002, Chang *et al.*, 2003, Wah & Abu Bakar, 2003). In exploring the extent of data mining utilisation within organisations, identification of attitudes toward current systems, influential factors in the decision to adopt such technology and also understanding the reasons for not adopting such technology are important.

Prior studies of data mining readiness and implementation have been undertaken in the private sector. Evidence suggests that personnel within private sector firms are aware of and ready to implement this technology. Studies in the area of telecommunication, banking, and insurance companies indicate that there is a level of optimism and innovativeness among employees indicating the potential to adopt data mining techniques. Readiness can be seen in terms of the adoption of or intent to adopt data mining technologies (Berger, 1999, Chye & Gerry, 2002, Dahlan *et al.*, 2002, Chun & Kim, 2004). However, there is no such evidence available to indicate whether or not personnel in the Malaysian public sector are also aware of and ready to adopt the concept of data mining. In seeking to access the best information for better decision making the Malaysian government acted to implement E-Government which has also seen significant technological improvements in general within business, and increasingly within accounting and audit departments seeking to improve their accounting information system and implement new technologies. The implementation of new technology such as data mining within the accounting environment is expected to be helpful and to enhance the quality of information available in decision making.

There have been many studies of the AIS that have focused on internal controls, audit, and the accounting model (Dunn & McCarthy, 1997, Geerts & McCarthy, 1999). Studies on the implication of information technology within the AIS have incorporated the decision making process (Benford & Hunton, 2000, O'Donnell & David, 2000). Although there have been a few reports by government organisations such as the General Accounting Office in the United States of America (US) on the utilisation of data mining technology they have not shown how this technology could enhance capability in different environments. However, there do not appear to be any studies of data mining technology within the AIS in the public sector in Malaysia. This paper seeks to redress this gap in the literature by providing insights into the adoption and implementation of data mining techniques within the accounting information system in the public sector. The literature that addresses data mining including related concepts such as ICT, Knowledge Management (KM) and also AISs are reviewed.

The remainder of this paper consists of two sections, as follows. The next section presents

a literature review on ICT, the AIS, and data mining. It provides the background to ICT development in Malaysia and the potential use of data mining in the Malaysian public sector. This leads to the development of a general definition of data mining and its use within AIS. A proposed data mining utilisation model for application in the Malaysian public sector is also presented in this section. A summary is provided in the last section.

## Literature Review

Most of the research on data mining technology focuses on the development, and implementation of various technologies, the process of data mining and its applications on general framework, cross-sales, deviation detection, organisational learning, interface, consumer behaviours, data quality, health care management, prediction of failure, marketing, software integration, knowledge warehouse, and hypermedia (Liao, 2003). It seems that, most of the studies undertaken have been by information system, expert system, or database management researchers. There has been little research which has addressed implementation within auditing, finance and banking. For example, Lampe and Garcia (2004) have raised discussions on data mining issues which should be considered by the internal auditor in both large and small organisations. Other studies exist which describe the use of data mining to forecast the foreign exchange time series process, analysing financial reports, and as an early warning system of economic crisis (Vojinovic *et al.*, 2001, Kloptchenko *et al.*, 2004, Kim *et al.*, 2004).

## What is Data Mining?

Data mining is the activity of extracting data obtained from a variety of sources, usually held in a central data warehouse, for evaluation to assist in responding to questions posed, for example, by management. In technological terms, the concept of data mining is known as the process of discovering new, valuable information from a large collection of raw data (Fayyad *et al.*, 1996, Brabazon, 1997, Firestone, 1997) and should enable better decision making throughout an organisation (Berry & Linoff, 1997, Nemati & Barko, 2002, Fong *et al.*, 2002, Wen, 2004). Other terminology that has been used to find useful patterns in data includes knowledge extraction, information discovery, information harvesting, data archaeology and data pattern processing (Fayyad *et al.*, 1996). Because the architecture of the data mining model integrates various techniques and fields, it has meant different things to different people and it is not surprising that different ways of looking at the concept have taken place.

In defining data mining, the ultimate aim is to identify the core elements that should be present if data mining is to be effective – these are an ability to find, analyse, extract, discover, and identify patterns or relationships from data. The ultimate goal of data mining is to allow the evaluation of data to provide information that allows a better understanding of what has happened, why it happened and to some extent predict what will happen. This knowledge would assist in the process of making decisions and assist the firm in identifying approaches to increasing competitiveness.

To achieve this ultimate goal, data mining utilises various fields of technologies such as artificial intelligence, neural networks, computer science, machine learning, database management, data visualisation, mathematic algorithms, and standard statistical techniques. The combination or integration of these techniques via up to date technologies is employed to search for useful information through an automatic or semiautomatic process. However, the automation process of data mining does not appear to be an important measurement for those authors in defining data mining as only four out of the seventeen definitions reviewed mention this issue. The definitions of data mining appearing in the relevant literature are presented in Table 1.

**Table 1: Data Mining as Defined in the Literature**

Author	Definition
Fayyad et al., (1996)	Data mining is a step in the knowledge discovery in databases (KDD) process and refers to algorithms that are applied to extract patterns from the data. The extracted information can then be used to form a prediction or classification model, identify trends and associations, refine an existing model, or provide a summary of the database being mined.
Newing (1996)	Data mining is the process of extracting valid, previously unknown and ultimately comprehensible information from large databases and using it to make critical business decisions.
Brabazon (1997)	Data mining is the discovery of new, non-obvious, valuable information from a large collection of raw data.
Firestone (1997)	Data mining is traditional data analysis methodology updated with the most advanced analysis techniques applied to discovering previously unknown patterns.
Berry and Linoff (1997)	Data mining is "the process of exploration and analysis, by automatic or semiautomatic means, of large quantities of data in order to discover meaningful patterns and rules."
Fabris (1998)	Data mining is described as the automated analysis of large amounts of data to find patterns and trends that may have otherwise gone undiscovered.
Chung and Gray (1999)	"The objective of data mining is to identify valid, novel, potentially useful, and understandable correlations and patterns in existing data."
Two Crows Corporation (1999)	Data mining is a process that uses a variety of data analysis tools to discover patterns and relationships in data that may be used to make valid predictions.
Greengard (1999)	Data mining is a group of analytical applications that search for hidden patterns in a database.
McVey (2000)	Data mining is an automated approach for discovering or inferring hidden patterns or knowledge buried in data. "Hidden" mean patterns that are not made apparent through casual observation.

Nemati & Barko (2002)	Data mining is a process that uses statistics, artificial intelligence and machine learning techniques to extract and identify useful information, and subsequent knowledge, from large databases.
Fong et al., (2002)	Data mining is the process of discovering interesting knowledge from large amounts of data that can be used to help companies make better decisions and remain competitive in the marketplace.
Smith (2002)	Data mining is a process that uses a variety of data analysis tools to discover patterns and relationships in data and using them to make valid predictions.
Liao (2003)	Data mining is an interdisciplinary field that combines artificial intelligence, computer science, machine learning, database management, data visualisation, mathematic algorithms, and statistics. Data mining is a technology for knowledge discovery in databases. This technology provides different methodologies for decision making, problem solving, analysis, planning, diagnosis, detection, integration, prevention, learning and innovation.
Wah and Abu Bakar (2003)	Data mining is a variety of techniques such as neural networks, decision trees or standard statistical techniques to identify nuggets of information or decisionmaking knowledge in bodies of data, and extracting these in such a way that they can be put to use in areas such as decision support, prediction, forecasting, and estimation.
Wen (2004)	Data mining is the process of discovering patterns in data. The process must be automatic or semiautomatic. The patterns discovered must be meaningful in that they lead to an increase in the quality of decision making.
Landry et al., (2004)	Data mining is a variety of tools and processes that can work independently or together to analyse and discover relationships in collections of data.

While the difference between definitions can be identified as the way data mining tools are executed, the aims across definitions are consistent. The aim is to provide the means to find, analyse, extract, discover, and identify patterns or relationships from the data to enhance the decision making process. Interestingly a number of researchers indicate this assembly of data should embrace interdisciplinary fields and be able to utilise a variety of data analysis tools, and a few indicate that a feature of data mining should automate the process.

Artificial intelligence (AI) researchers, statisticians, management researchers and economist have different ways of looking at this term. Therefore, data mining can be viewed as a combination of ICT, statistical and data analysis, and knowledge management. Consequently, Lampe & Garcia (2004) suggested that there is no universal agreement of the definition of data mining. In Table 2 the common elements of the definitions are identified.

**Table 2: Common Elements of Data Mining Definitions**

Author	Ultimate aims of the process	Characteristics	
	To find, analyse, extract, discover, and identify patterns or relationships from the data to enhance decision making process.	Interdisciplinary fields, updated and variety of data analysis techniques, tools	Automatic or semiautomatic
Fayyad et al., (1996)	✓		
Rod Newing (1996)	✓		
Brabazon (1997)	✓		
Firestone (1997)	✓	✓	
Berry and Linoff (1997)	✓		✓
Fabris (1998)	✓		✓
Chung and Gray (1999)	✓		
Two Crows Corp (1999)	✓	✓	
Greengard (1999)	✓	✓	
McVey (2000)	✓	✓	
Nemati and Barko (2002)	✓	✓	✓
Fong et al., (2002)	✓	✓	
Smith (2002)	✓	✓	
Liao (2003)	✓	✓	
Wah and Abu Bakar (2003)	✓	✓	
Wen (2004)	✓	✓	
Landry et al., (2004)	✓		

### Data Mining of the Accounting Information System

Decisions made as a result of information generated by the AIS rely on the presented information and the ability to ascertain that it is reliable; for example, assurance assessments in relation to the content of financial statements. A good financial statement can be produced with the availability of the right data. The need for integrated systems with the capability of producing timely information and the ability to meet reporting deadlines has also put a

pressure on the organisation (Carrigan *et al.*, (2003). An appropriate implementation of new technology and upgrading agencies within the core financial management system will improve financial reporting capability, which will not only help managers to make better decisions by obtaining timely information, but will help them meet new accelerated reporting deadlines. ICT infrastructures will provide a platform for the AIS in terms of collecting, exchanging data, coordinating activities and sharing information (Moxon, 1996, Liao, 2003). This suggests that an accounting database which is able to store large amounts of transaction data is important to decision makers in providing the ability to generate information to assist in choosing the best course of action. This is where the use of statistical and data analysis tools together with a good knowledge of management policies is likely to be useful and where data mining would play an important role.

Weber (2002) argues that data mining is not only important as a transaction tracing tool in financial auditing but also in offering the ability to undertake overall testing of systems and controls to ensure the firm can produce good financial statements. The implementation of this tool within the AIS should enable the accounting department to expand the information that can be made available for decision making. The increase in accounting information available through the internet has made data mining important in ensuring users are able to retrieve accounting information with high levels of accuracy and reliability (Debreceeny *et al.*, 1999). It also enhances the capabilities of the AIS to play a role in effectively collecting transaction data, providing information for decision makers and assisting in the assurance of internal controls (Burns, 2003).

Stakeholders with an interest in the AIS within organisations in both the private and public sectors should consider the implementation of data mining in their operations and decision making process. Informed accounting knowledge aided by the AIS with analysis presented via data mining tools would help in forming financial decisions. Data mining allows the reiteration of processes facilitating revision and the refinement of queries by users of this information. The AIS captures a wide variety of transaction data and is used as a primary source of information for an organisation to use in meeting their goals and objectives. Incorporation of data mining technologies within the AIS would enhance this process. Mckie (1997) noted that applying data mining software can improve a department's role as a provider for decision makers since the majority of accounting software does not have specific data mining capabilities built-in.

### **ICT and the Utilisation of Data Mining in the Malaysian Public Sector**

In this section a review of ICT and the importance of the management of data in the Malaysian public sector are presented. In particular, some observations on the utilisation of data mining within the public sector are discussed before focusing on the potential utilisation of such technologies within the Malaysian public sector AIS. A utilisation model is developed to facilitate discussion on the application of data mining technologies within the AIS in the Malaysian public sector.

## **ICT Background: The Country**

Malaysia has a strategic location as a major crossroad linking the East and the West. It has a diversity of cultures, languages, religions, politics and social beliefs resulting from the influences of, and settlement of early traders and merchants from China, India, the Middle East and colonial influences from the Portuguese, Dutch and British. Malaysia is a multiracial and multilingual country. Bahasa Melayu is the official language, but English is widely used in business and government. The other major languages are Mandarin, Chinese dialects, and Tamil (Raman & Yap, 1996).

Historically, the Malaysian economy was based on agriculture and natural resources. The focus has shifted since the 1980s towards an economy which is productivity-driven in terms of industrial development and the utilisation of high technology. ICT has become a catalyst for national development for many nations including Malaysia. To enter the globalised world it is necessary for Malaysia to become part of the "information society" (Raman & Yap, 1996, Goebel & Gruenwald, 1999, Bose & Sugumaran, 1999, Raeside & Walker, 2001) to be able to compete and leverage the benefits of information technology innovation. This is due to the increase in the application of information technology adoption across the world in both the private and public sectors and has resulted in significant changes in facilitating communication and the exchange of information and data to organisations.

## **ICT: Its Importance for Management of Data in the Malaysian Public Sector**

In an attempt to facilitate the country's participation in the global environment the Malaysian Government has actively encouraged the development of and application of technology. The Malaysian government took the initiative to establish National Information Technology Agenda (NITA) and the Multimedia Super Corridor (MSC) (Awang, 2004). This is inspired by the belief that ICT would enable organisations to create, manipulate and distribute information and communications more effectively resulting in an improvement in the quality and effectiveness of both private and public sector information access and communication leading to efficient and effective decision making.

The adoption of technology and advances in technology are of interest to all organisations since information technology usage fundamentally alters the domains within which it is implemented (Danziger & Andersen, 2002). Technology may impact at both the individual level such as how public sector employees, managers or citizens complete their work and also at the collective level which embraces a group of individuals such as workgroups, department, state agencies and ministries (Danziger & Andersen, 2002). In alignment to this view the Malaysian government has focused attention on the adoption of ICT technologies within its ministries, agencies and departments. In efforts to achieve this, the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) was created. Through MAMPU the Government acknowledges the challenges in planning the implementation of ICT. The

challenge for the public sector is to identify and implement the objectives to deliver government services with the aid of ICT to:

- provide an efficient, expeditious, secured and quality service electronically;
- leverage on ICT and multimedia to enhance productivity in the Public Sector;
- facilitate the sharing of resources among Government agencies; and,
- be citizen-centric in the delivery of its services.

In an attempt to achieve these objectives the Malaysian government requires that every public sector department works toward a system that provides integration of systems in the generation of information and aspires to support each other while leveraging ICT to achieve these ends. The exploitation of the benefits of ICT is further accelerated under the Electronic Government (E-Government) flagship under which all departments and agencies (within Putrajaya – a province of Malaysia) will be linked to create a multimedia network and paperless administration. It is envisaged that through these efforts, there will be more integration and sharing of information in soft copies rather than in hard copy paper based communication between agencies.

Data mining technologies are fundamental to the adoption of ICT under E-Government projects as the concept of a common database is one of the considerations in electronic government. For example, the Project Monitoring System which was developed to monitor the efficiency and effectiveness of the implementation of government development projects will work in a collaborative environment with workgroup computing, workflow management systems, common database access and messaging services. Data mining technologies play an important role within these databases to satisfy the different kinds of monitoring activities required such as the handling of different types of information and media, information sharing capability among and within the agencies and keeping track records and know-how to facilitate the sophisticated management of project monitoring. Besides the Project Monitoring System, other projects within E-Government initiatives include the Human Resource Management Information System (HRMIS), General Office Environment (GOE), Electronic Government-Accountant General (EG-AG) and E-Services such as the electronic delivery of driver and vehicle registration, licensing and summons, utility payments and Ministry of Health on-line information ([www.mampu.gov.my](http://www.mampu.gov.my)).

All such systems provide a technological environment for the collection and management of various data: with this data managerial decisions can then be taken. In the decision making process functions such as statistical trend analysis, forecasting, simulation and data mining are acknowledged to be important. Data mining enables the agencies to classify and synthesise information into various levels with various viewpoints (MAMPU, 1997a, 1997b). In the case of the accounting department, for instance, the use of ICT will result in increased available data being transferred to the audit department for analytical purposes. An accounting system can be seen as a system of accountability, in maintaining, analysing and contributing to the process of decision making within departments (Llewellyn, 1994). By utilising data mining

technologies the productivity of an accounting department in their management of data can be enhanced. The accounting department would be enabled to provide an efficient, speedy, and secure process offering quality services with better integration and sharing of information between departments.

The good management of financial data via an effective use of data mining technologies would help to ensure that the information flow between departments was effective, reliable, and accurate. However, organisation theory suggests that management of data, information, knowledge and decision making are constrained by the ability of the decision maker (Nemati & Barko, 2002) to organise and successfully integrate data mining into the organisation. In addition, good internal integration across departments with appropriate technological infrastructures would be expected to improve the speed and quality of government services to the public.

### **Utilisation of Data Mining Technologies Within the Public Sector: Some Observations**

The public sector has an interest in developing the use of data mining technology because of the ability offered by these technologies to perform work related to:

- **Audits and Investigation of Government's Project and Programs**

Data mining technology would increase confidence by enhancing the process of audits and investigation of government's project and programs. For example, the US General Accounting Office used data mining to perform audits and investigations work on federal credit card programs, purchase and travel card programs, Department of Defence's (DOD) vendor pay systems, Army military pay systems, Department of Housing and Urban Development housing programs, and Department of Energy national laboratories (GAO, 2003). Data mining was also implemented within the public sector through the demonstration program undertaken by the US Office of Naval Research (Kostoff & Geisler, 1999). They found that data mining (textual) would be of benefit in the integration of their databases, would support strategic decisions and allow the creation of usable databases. Other organisations such as NASA, National Institutes of Health, and intelligence agencies (i.e. FBI, CIA), Department of Defense (Army, Navy, Air Force and Marine Corps) were amongst the adopters of data mining (Carbone, 1998).

- **Fraud Prevention And Detection**

Data mining technology has the ability to profile common usage scenarios and detect new or different patterns for the prevention of fraud and to improve further investigations. In the US, data mining was adopted by the Illinois Department of Public Aid to identify health care providers that were billing for services provided in excess of 24 hours in a single day. This enabled the identification of violators and the referral of cases to law enforcement agencies.

- **Empowered E-Government Initiatives**

Data mining technology also has the ability to turn data into actionable information that government can use to transform interaction with service recipients. It gives the government the ability to proactively make changes based upon future needs. A number of key business issues should be taken into account in the consideration of the use of data mining strategies that align with ultimate government goals in attempts to launch “E” projects.

Tax agencies have made frequent use of data mining technology in the United Kingdom and Australia to assist in identifying taxpayers evading obligations and to assist in making effective resource allocation decisions (Micci-Barrera & Ramachandran, 2004). Moreover, with the predictive modelling capability offered by data mining tools, tax agencies are more able to identify noncompliant taxpayers in a more efficient and effective manner. It is expected that data mining technology would assist agencies in refining their traditional audit selection strategies to produce more accurate results.

In the case of Malaysia, the Inland Revenue Board would also benefit from data mining tools. The implementation of a self-assessment method (Sistem Taksiran Kendiri) for tax payments identifies an area in which there is a large quantity of data collected and data mining will assist in generating revenue through efficiencies in their operations. Efficiencies in collecting tax with minimal problems on noncompliance would increase the benefits for the country as a whole.

Organisations such as Road Transport Department, Royal Police of Malaysia, Immigration Department, National Registration Department, Health departments, other departments and ministries can also be potential users of data mining application and technology in synthesising their data. For example the Malaysian Ministry of Health is collecting scientific data for analysis to improve the health systems and medication required for the treatment of various diseases. Data mining could be used to assist in making decisions about the best treatment to use for different diseases. It can be argued that data mining utilisation would benefit many public sector departments in improving their capability, efficiencies, effectiveness and their delivery services to the general public. Further, the Accounting General’s Department, Audit General’s Department and the Ministry of Finance have various financial data: these departments have the potential to adopt data mining technology to synthesise all financial information that is available to assist in decision making and those of the agencies relying on them.

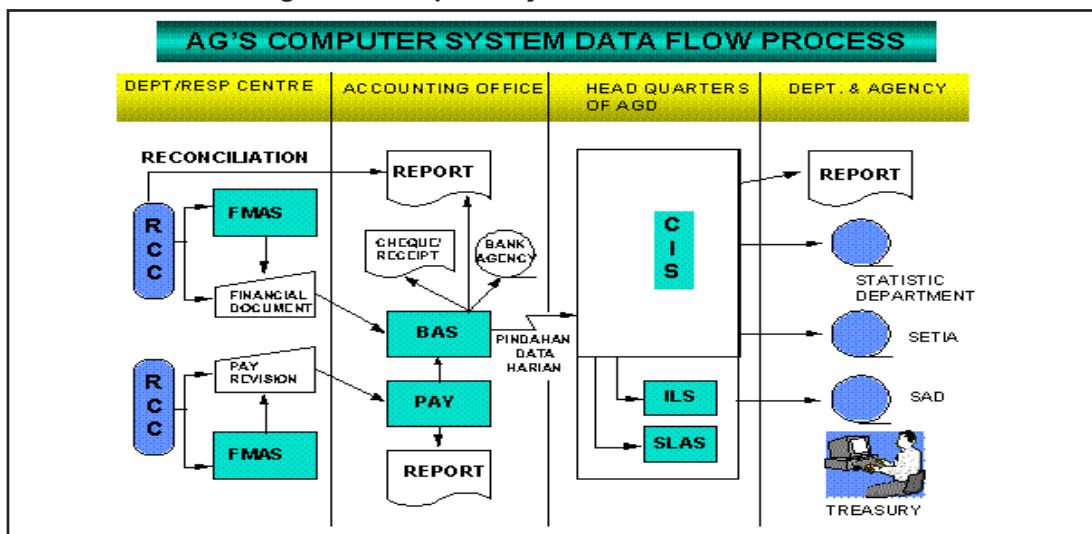
### **The Malaysian Public Sector Accounting Information System and Potential Uses of Data Mining**

The application of data mining technologies would be of great benefit in assembling information required, for example, in increasing operational efficiencies, fraud detection and in enhancing the overall decision making in organisations including public sector organisations (Nemati &

Barko, 2002, Lampe & Garcia, 2004). Accounting and financial systems within public sector agencies are one area in which knowledge based improvements can be made by acting to create both improved and additional financial information, and to improve access to this information. The use of data mining technologies will enhance decision making made by accounting, finance and audit departments within the public sector.

The Accountant General's Department in Malaysia is the main department responsible for monitoring and managing accounting related data for the public sector. The systems used by the department are shown in Figure 1.

**Figure 1: Computer System Data Flow Process**



Source: Accountant General Malaysia website ([www.anm.gov.my](http://www.anm.gov.my))

They include the Branch Accounting System (BAS), Payroll System (PAY), Central Information System (CIS), Investments and Loans System (ILS), Subsidiary Ledger Accounting System (SLAS) and Financial and Management Accounting System (FMAS). In Malaysia the data repository focuses on a centralised information system. The distribution of data (and information) emanates from the headquarters of the Accountant General's Office, data warehouse or CIS. Data mining technologies, on request for access to data, can then play a role in analysing, interrogating and mining the data for decision making. Data mining has many potential uses in accounting in the public sector: it could assist in dealing with the government's payments to suppliers, government expenditures, for example, on assets, and it would increase the efficiencies and effectiveness of departments in their operations and enhance their accountability. Data mining use in audits of accounting and financial data could reduce unethical practices and misconduct of civil servants involving bribery and other financial misconduct.

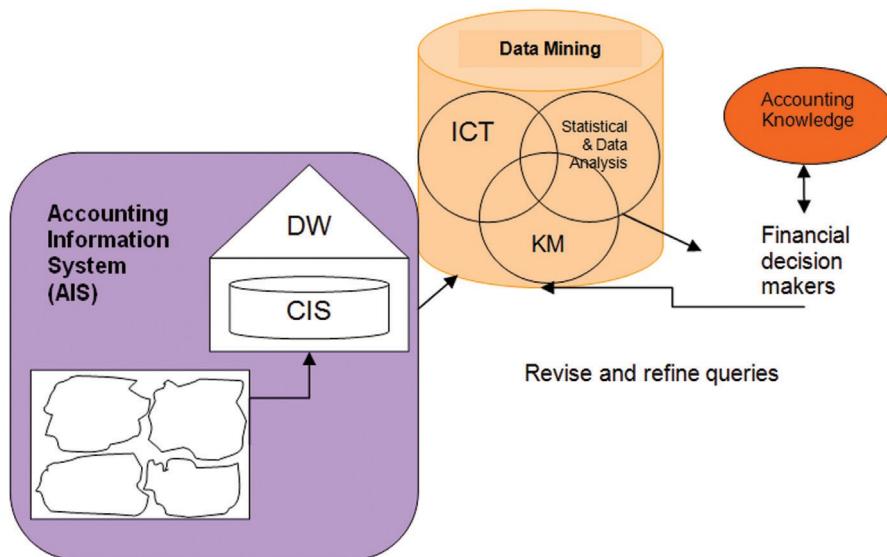
The utilisation of data mining to manage, exploit and analyse the data from the centralised data warehouse will increase the performance of reports produced by the department which are then distributed to other departments and agencies, for example to the statistics department, self-accounting department (SAD) and the finance ministry for ministerial decisions. Financial performance could be anticipated with data mining technology (Kloptchenko *et al.*, 2004).

In sum, data mining technologies could be used to analyse the public accounts, and the financial performance of each government department in reaching their objective and controlling their budgets. The technology will increase the ability to access and assess financial performance of departments in the management of financial resources. Data mining techniques and neural networks for example, have been applied extensively to the task of predicting and forecasting financial variables which assist the assessment of overall systems (Vojinovic *et al.*, 2001, Chun & Kim, 2004). Data mining plays an important role in various fields including financial accounting, management accounting and auditing and in determining profitability, ratio analysis, cost analysis and department productivity, analysis of management fraud, and examining the effectiveness of the business as a whole. The ability to utilise data mining may offer a competitive advantage to users and in the public sector result in better performance in the ability to offer services to the citizens of the country.

### Data Mining Use Within the Accounting Information System

In order to identify the use of data mining technology within the accounting information system in the Malaysian public sector an utilisation model is presented (see Figure 2). The figure illustrates the flow of data from the accounting systems through to the ability to make informed decisions.

**Figure 2: Data Mining Use Within Accounting Information Systems**



The AIS manages transactions, produces reports and supplies other functions which can integrate with the various systems operating in the agency. This includes the Financial and Management Accounting System (FMAS), Payroll System (PAY) and Branch Accounting System (BAS) which then contributes the information to a Centralised Information System (CIS). From this it then integrates with the Investment and Loans System (ILS) and Subsidiary Ledger Accounting System (SLAS).

As proposed by this model, the function of the CIS will act as a master database or data warehouse (DW) which will contain all the data from various accounting systems. Through this, the application of data mining technology which integrates ICT, statistical data analysis tools and knowledge management (KM) would enhance the accounting knowledge for the related decision making process.

## Conclusion

This review has presented a broad picture of ICT and the AIS leading to a discussion of data mining technology within the public sector. In addition, the review leads to a proposed utilisation model of data mining within AIS. The public sector in Malaysia has an opportunity to increase efficiency and effectiveness by endorsing the implementation of such technology. As in the private sector, the public sector accounting information systems is a major information provider, and the availability of data mining can play an important key role in the decision-making process. It has been argued that data mining could be used to enhance accounting information and improve the capability of government departments to make decisions about financial matters. However, there is a limited knowledge about the status of data mining activities, its utilisation within accounting information in the Malaysian public organisation. Therefore an exploration of data mining utilisation amongst accounting related departments such as the Accountant General's Department, Auditor General's Department and the Ministry of Finance would offer insights into the adoption and intention to adopt technology and data mining techniques.

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## The Presentation Formats of Local Authorities' Financial Statements: Malaysia Evidence<sup>1</sup>

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### Abstract

Malaysia is experiencing rapid development with a vision of becoming a fully developed nation by 2020. In order to achieve this, an efficient financial management system is required in all government agencies including the local authorities. The efficiency depends on the effectiveness of the financial management and the quality and reliability of the financial reports prepared. A study was carried out to compare the formats of financial statements formats adopted from 2004 to 2008. 75 local authorities (out of 96 local authorities in West Malaysia) responded by sending their audited financial statements. The trend analysis revealed that the local authorities were not consistent in the formats adopted.

**Keywords:** Local authorities, public sector accounting, financial reporting analysis, accounting transformation, Malaysia.

### INTRODUCTION

The Malaysian administrative system is divided into three major levels of hierarchy: Federal Government; State Government; and Local Government (Local Authority). Although the Local Authorities are the lowest in the Government hierarchy, they are very close to the community. Thus, the Local Authorities need to be efficient in managing its financial situation and continuously improve its financial efficiency as a commonly desired goal. The efficiency of the financial management system depends on effective financial management and the quality and reliability of the financial reports prepared by the organisation.

Local authorities in Malaysia serves as an important mechanism to further the policies and to facilitate the implementation of relevant strategies and programmes of the Federal and State Governments (Hazman Shah, 1992). The audited financial reports of the local authorities are the means for the local authorities in determining their accountability to their stakeholders (Ryan, et. Al, 2000). According to Nafsiah and Ruhaya (2006), the audited financial statements included in the report provide a wealth of information to anyone with an interest in the government's economic condition.

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In recent years the media has taken an active role in highlighting many issues that concerned the public interest, which demand the local authorities to be more accountable. The United Nation Economic and Social Commission for Asia and the Pacific (1998) study indicated that Malaysia's Local Authorities financial position is weak because they are not able to acquire additional revenue to provide services demanded by the community. Consistent with the study, public has now raised the issues in the newspapers questioning Local Authorities financial management and the uses of the public funds.

Tayib (1995) identified that the local authorities in Malaysia are primarily practising four Accounting Standards: International Accounting Standards (IAS); guidance issued by the Ministry of Housing and Local Government; self created accounting practices; and Federal Treasury Circular. This led to inconsistency in presentation of the financial statements which makes it difficult to make comparison between local authorities.

The purpose of this study is to find out whether this practise is still existing in the local authorities. Thus, the specific objective of the study is to compare financial statements format adopted by the local authorities from 2004 to 2008.<sup>2</sup>

## METHODOLOGY

Letters were sent to all 96 local authorities (excluding Kuala Lumpur City Hall) in Peninsular Malaysia requesting Audited Financial Statements for the year ended 2004, 2005, 2006, 2007 and 2008. Then, follow-up letters and calls had been made to the local authorities that failed to submit the Audited Financial Statements within the given timeframe. As a result, a total of 75 local authorities had responded to the request (see Table 1) with a total of 375 audited financial statements being submitted for analysis.

Analyses of financial statements were carried out with a focus on the Statements of the Financial Position and Statements of the Financial Performance.

**Table 1: Number of local authorities responded**

STATES	TOTAL NO.	NO. RECEIVED
Johor	14	8
Kedah	11	11
Kelantan	12	10
Melaka	3	2
Negeri Sembilan	8	2
Pahang	11	11
Pulau Pinang	2	1
Perak	15	10
Perlis	1	1
Selangor	12	12
Terengganu	7	7
	96	75

<sup>2</sup> The study was conducted between May to October 2010. At the time when letters were sent out, the 2009 financial statements were not yet audited or if audited, were not yet gazetted

### Analysis of Format Adopted

Format of The Statements of the Financial Position and The Statements of the Financial Performance were analysed according to their presentation. There is no specific requirement for the Local Authorities financial statements to be presented in certain format. The analysis of format would determine whether there is any uniformity in their presentation of financial statements.

## **ANALYSIS OF RESULT**

### **Analysis of Format Presentation**

#### **I. Statements of Financial Performance**

According to Coombs and Tayib, p11 (1998) 'No clear rules and regulations spelling out the form and content of the statement of accounts that should be prepared by the local authorities were laid down either before or after the independence of Malaya'. There has been no development in the regulatory reform since then. This study attempts to determine whether in practice there has been any improvement with the local authority presentation of financial statements. The trend analysis revealed that the local authorities were not consistent in the formats adopted and disclosure of information.

Table 2 shows there were 6 formats adopted by the local authorities.

**Table 2: Formats adopted by local authorities from 2004 to 2008**

<b>FORMAT</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
A	22	22	22	22	24
B	8	6	6	6	5
C	8	10	10	10	9
D	26	26	26	16	16
E	9	9	9	19	19
F	2	2	2	2	2
<b>Total</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>

Format A and D are the two formats commonly adopted. They are almost similar except that the items of revenue and expenditure are more detailed in Format D.

**Table 3: Explanation on the different format of Statement of Financial Performance**

FORMAT A	Disclose breakdown of all income and expenditure with notes for each item.
FORMAT B	Disclose total income and total expenditure with notes but no breakdown items in the Statement.

FORMAT C	<p>Disclose the breakdown of income according to the types of revenue: Direct Tax; Indirect Tax; Non-Revenue Receipts; and Grants or Contributions from Government.</p> <p>Breakdown of all expenditures are disclosed. In addition, Development Expenditure is included as operating expenditure, even though disclosed under a separate heading.</p>
FORMAT D	<p>Almost similar to Format A. The difference is that, some of the revenues and expenditures had been grouped and classified under specific headings with notes.</p>
FORMAT E	<p>Almost similar to Format C. The difference is that, the items under the types of Revenue: Direct Tax; Indirect Tax; and Non-Revenue Receipts are grouped under each heading with notes. No item on Grants or Contributions from Government.</p> <p>For expenditure, most of the items had been grouped under specific headings and details are disclosed in the notes.</p>
FORMAT F	<p>Almost similar to Format C. The difference is that, the expenditure on development and capital assets are disclosed and included as part of total expenditure. The statement shows the surplus (if any) being transferred to the <i>Kumpulan Wang Terkumpul</i> or reserves.</p>

It shows that uniformity in presentation is not present. Interviews with some local authorities revealed that the change of format might be due to recommendations by the external auditors or influenced by peers from other local authorities or directives from top management.

When there is no uniformity, comparison between local authorities within a state or among other states is not possible. Though, they are not operating in a competitive environment, comparison between the financial performances of the local authorities would gauge how well the local authorities are fulfilling their objectives. The local authorities can place themselves at par with the other local authorities that are performing well. They can also learn from the mistakes made by other local authorities and improve themselves.

Since there are no accounting standards imposed on them, local authorities adopt modified accrual accounting, modify according to their needs. As different treatments were used the problem of comparison among local authorities arises.

### ***Uniformity Within States (2004 – 2008)***

Table 3 shows that out of 11 states only 5 states have uniformity in adopting the format. (Perlis was excluded as the state has only one local authority). In Kedah 10 out of 11 of the local authorities had moved from different format to Format A in 2008. Thus, all 10 are uniform in presenting the Financial Performance except for Alor Setar City Council that had moved to Format D from Format A.

Selangor is one of the states that had adopted various formats of the Statements of the

Financial Performance within the timeframe of 2004 to 2008. As at 2008, five different formats have been adopted: Format A and Format F had been adopted by two local authorities respectively; four local authorities adopted Format B; and Format C and Format D were adopted by two local authorities.

Nevertheless, there are also local authorities within the states that are adopting uniform formats. Local authorities in Johor and Melaka for example are adopting Format A, whereas local authorities in Pahang are adopting Format D, and those in Perak are adopting Format E.

**Table 3:** Format comparison between states

States	A	B	C	D	E	F
Johor	√					
Kedah	√			√		
Melaka	√					
Negeri Sembilan	√			√		
Pulau Pinang			√			√
Pahang				√		
Terengganu		√	√			
Perak					√	
Kelantan	√				√	
Perlis					√	
Selangor	√	√	√	√		√

### **Format Uniformity Among States**

Based on Table 3, it can be seen that there is no uniformity among the states in presenting their Statements of the Financial Performance. For example, Johor and Melaka adopted Format A, whereas Perak and Perlis adopted Format E.

Even though local authorities in Johor and Pahang adopted uniform format within their states, comparison between the two states were not possible as Johor adopted Format A whereas Pahang adopted Format D.

### **II. Statement of Financial Position**

In 2004, it was found that there were three types of Statements of Financial Position format adopted by the local authorities. Table 4 shows in 2004 and 2005, 71 local authorities adopted Format A, three local authorities adopted Format B and only one local authority adopted Format C. Nevertheless by 2008, all the 75 local authorities had adopted a uniform format, that is, Format A.

**Table 4: Format adopted by the local authorities**

FORMAT	2004	2005	2006	2007	2008
A	71	71	73	73	75
B	3	3	2	2	0
C	1	1	0	0	0
TOTAL	75	75	75	75	75

Even though there is no uniformity in the Statements of Financial Performance format, either within the states or among the states, the 75 local authorities tend to be uniform in adopting the Statements of Financial Position format. Unlike the private sector where companies must comply with the Malaysian Financial Reporting Standards, the local authorities do not have such regulations. It is high time that a uniform accounting standard to be enforced to all local authorities.

## CONCLUSION AND RECOMMENDATION

In order to enhance the quality and uniformity of financial reporting of Local Authorities throughout Malaysia, harmonisation of the financial reporting format is a priority. It is important that initiatives towards the adoption of one single set of financial reporting be made as soon as possible. The announcement made by the government in March 2011, to move from modified cash accounting to full accrual accounting in 2015 had raised concern among local authorities. It is hoped that the announcement would caused the local authorities to take necessary actions to ensure that they are ready to embark when the time comes.

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## **The Factors Effecting the End-User Computing Satisfaction of Government Financial Management Accounting System (GFMAS)**

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### **Abstract**

The importance of computerised accounting system (CAS) is indisputable for private as well as public sector. One of the continuous efforts in the public sector can be seen through the introduction of Government Financial and Management Accounting System or GFMAS by Accountant General (AG) Department in year 2005. GFMAS is expected to enhance operational efficiency and effectiveness to enable the department to deliver value-added services. As far as researchers are concerned, no attempt has been made to examine End-User Computing Satisfaction (EUCS) towards GFMAS especially in AG Department. Thus, the purpose of this study is to determine the level of satisfaction among the end users of GFMAS at AG Department specifically in East Malaysia (Labuan and Sabah branches). Besides, this study also examines the effect of seven factors (content, accuracy, ease of use, format, timeliness, reliability of the system, speed of the system, etc) on the level of satisfaction among end users towards GFMAS. By distributing questionnaires to 140 AG staffs that using GFMAS and conducting in-depth interview with few directors and officers, empirical analyses have been drawn successfully. In general, end user satisfaction on GFMAS correlates significantly with content, accuracy, format, ease of use, timeliness, speed of the system and reliability of the system.

Keywords: End-User Computing Satisfaction, GFMAS, Public Sector

### **INTRODUCTION**

#### **1.0 Introduction**

The successful use of IT depends on the technology itself and the level of expertise of the end user using the technology (Zain, Raduan, Iskandar & Maslin, 2005). One of the measurements

in evaluating this successful system is End User Computing Satisfaction or EUCS. A number of studies have attempted to capture the overall evaluation perceived by the end users regarding the use of an information system; i.e. satisfaction, as well as the most immediate factors that form satisfaction (Doll & Torkzadeh, 1988; Doll & Torkzadeh, 1989; Doll & Torkzadeh, 1991; Henry & Stone, 1994; Torkzadeh & Doll, 1992)

However, it seems clear that previous researches have no attempt in discovering the factors affecting the satisfaction of the end users of the Computerised Accounting System (CAS) especially in the government sectors. Yet, it is essential to determine the factors that contribute to EUCS while assessing the overall evaluation of information system. This study attempts to examine the factors that contribute to the user satisfaction towards Government Financial Management Accounting System (GFMAS) at Accountant General (AG) Departments in Malaysia.

### **1.1 Government Accounting Entities**

Malaysian government is distributed into three tiers of government namely Federal Government, State Government and Local Government. The Federal Government is the highest tier, which comprises of ministries, departments and public enterprises. Second tier is State Government, which comprises of ministries, departments and public enterprises. The last tier of the government is Local Government comprises of city council, municipal council and district council. In addition, there are Statutory Bodies which are incorporated under respective acts and Government Linked Companies which are incorporated under the Companies Act 1965. Malaysia does not prepare whole of government account as each level of government is an accounting entity by itself and is subjected to different laws and regulations that are being enforced.

### **1.2 Public Sector Accounting**

The Federal and State Government have been adopting modified cash basis of accounting in the preparation of the annual financial statements where expenditures incurred in the old financial year but not yet paid will be paid in January of the new financial year and are reported as expenses for the old financial year. As for the Local Government, Statutory Bodies and Government Linked Companies, they have been adopting accrual basis of accounting in the preparation of the general purpose financial statements.

Public sector accounting practices in Malaysia comprises of three major components. First, maintenance of books and records especially vot book as a financial record that must be kept by the government agencies for recording expenditures, liabilities, and changes in budget. Second, all public sectors organisations' accounts are required to be prepared in compliance with rules and regulations set by the Federal Constitutions, Financial Procedure Act 1957, Audit Act 1957, Treasury Instructions and Treasury Circulars. The last component is preparation of reports and statements to be laid in parliament for approval.

### 1.3 Computerised Accounting System (CAS)

Since there are differences between the practices in the public and the private sectors, the application of the CAS in this organisation is also different from one to another. For instance, the private organisation utilizes the general ledger system and the accounting principles employed is based on accrual basis. However, the public organisations employ vot accounting system, which is based on cash basis. The financial management of the organisation is also related to budgeting using a code and warrant system (Statutory Bodies Act 1980 (Account and Annual Report) (Act 240)). Thus, it seems to be interesting to investigate the level of users' satisfaction in government sector, since it is different as compared to the company or business organisation.

The emergence of the computerised system gives an impact to both users regardless in the private sector as well as in the public sector. Due to the claim that there is an advantage of ICT usage and application, the government steps forward to implement the CAS in most of the government departments. Subsequently, they are able to manage the increasing volume of the financial data transactions, which seems impossible to compile them manually or using outdated system. The implementation of CAS is believed to enhance the performance and productivity, which lead to better administration of financial and accounting management. The CAS does not only provide the accounting report, but it also enables the user to evaluate the output of the system and the system itself.

The size and the complexity of government functions and the demand for timely and accurate information are also necessitate the use of ICT in the area of record keeping functions by increasing the number of ICT systems. Recently, the AG Department has introduced the Standard Computerised Accounting System for State Government in Malaysia. This system will help the auditors to minimise their time in doing the audit since the preparation of the State Government Financial Statement will be computerized (Buang, 2007)

Besides, AG Department has streamlined transactions towards accrual processing by considering the process of refinement to align cash accounting used by the system with accrual accounting (Pelan Strategik Jabatan Akauntan Negara Malaysia 2008-2012; 2008). Accrual accounting, previously thought to be only suitable in the private sector, has been seen to be an alternative for better reporting of government activities (Zakiah, 2007) . In fact, the accrual accounting has been adopted in the governments of several countries including Australia, New Zealand and the United Kingdom. The adoption and use of accrual accounting in Malaysia is seen feasible as the privatisation and corporation of major government projects has proven to be successful. The adoption of full accrual accounting system can show precisely the true financial position of the public sector agencies (Buang, 2007) . Thus, having a good financial or computerised accounting information system will increase the performance of an organisation. Eventually, this enables the public sector to increase productivity and efficiency while improving the service quality to their stakeholders and customers.

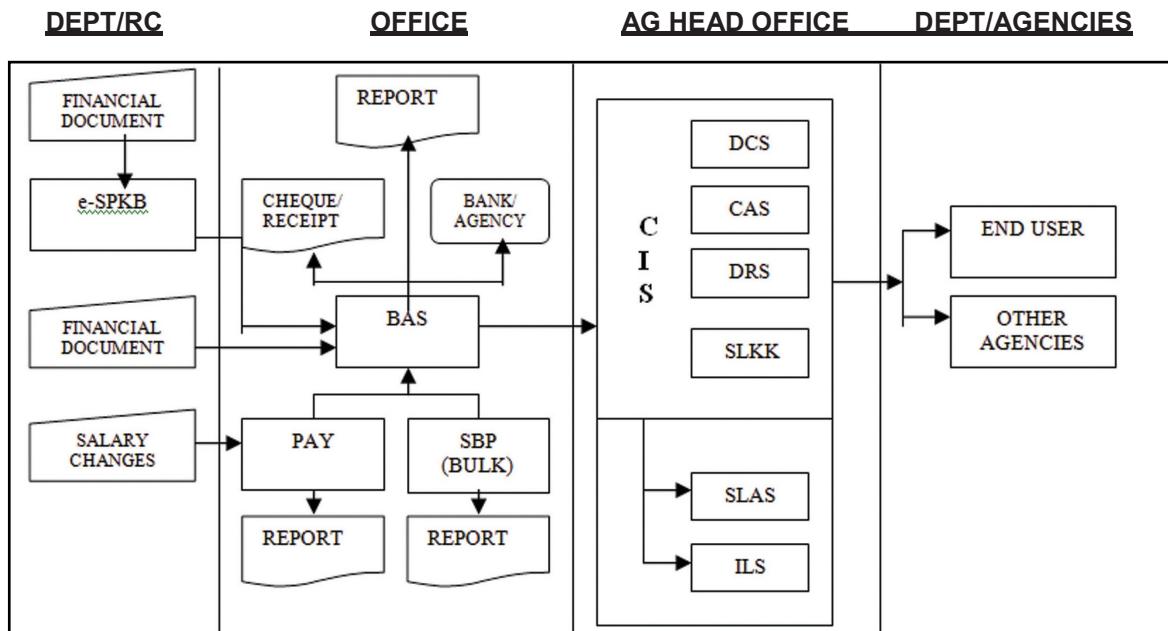
### 1.4 Legacy System-Branch Accounting System (BAS) vs. GFMAS

Prior to the launching of GFMAS, AG Department has utilized Branch Accounting System (BAS) for over 18 years. Technologically, BAS has been developed based on mainframe system. Thus, neither the system is fully integrated with the other department nor with module itself. **Figure 1** below depicts BAS Accounting System Flow.

From the workflow or work process point of view, BAS user should complete the task according to the batch. Moreover, the user performs a repetitive routine work which required manual checking process. Since there were so many manual involvements, this in turn has created high risk in erroneous and negligence. Consequently, this has resulted in shortage of career development among employees since they are constantly busy with the routine manual tasks rather than formulating the strategic planning for the department, system and also career advancement (Kok Ming, 2006).

As a comparison, GFMAS as presented in **Figure 2** below has been developed based on web-enabled system. This foundation has enabled GFMAS to overcome the problem whereby it has allowed more integrated data to fulfill demand from AG customers and stakeholders. In addition, unlike the mainframe used under BAS system which was obsolete, GFMAS has been provided by scaleable system which can be upgraded in the future.

#### ACCOUNTING



**Figure 1: BAS Accounting System Flow  
(Jabatan Akauntan Negara Government Financial and Management Accounting System)**

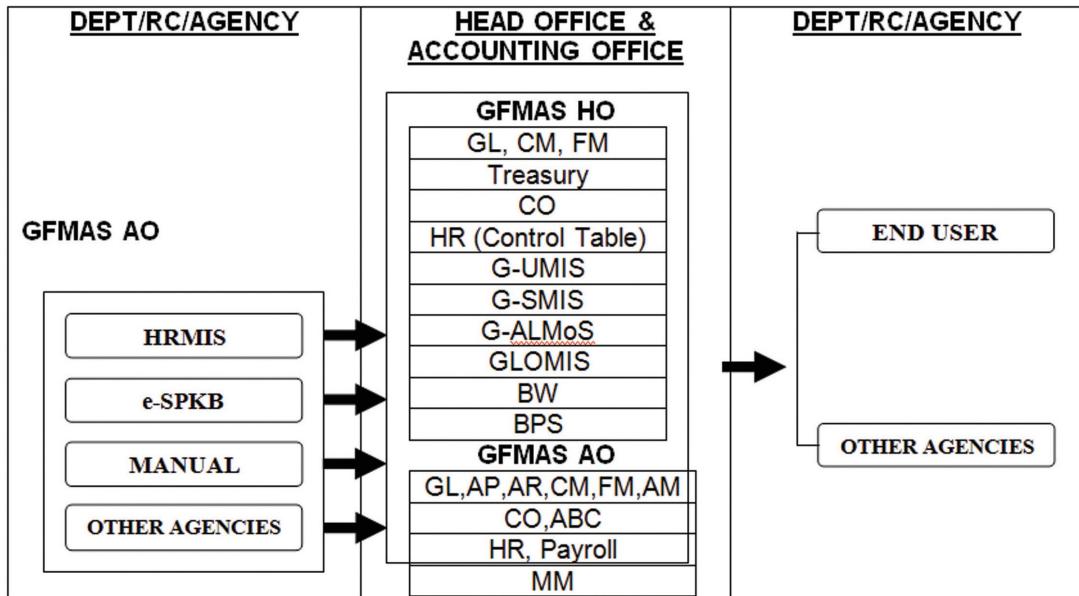


Figure 2: GFMAS Accounting System Flow  
(Jabatan Akauntan Negara Government Financial and Management Accounting System)

### 1.5 The Government Financial and Management Accounting System (GFMAS)

The Accountant General's (AG) Department has begun its operation since 1946 headed by Accountant General as Chief Accountant of Federal Government. This department is responsible to manage the Federal Government's consolidated fund and to formulate government accounting policies. In its continuous efforts towards becoming a leading organization in accounting services and fulfilling e-government requirement, the department has been re-engineering and developing its new accounting system to replace its previous system which is 18 years old.

The new application system is known as Government Financial and Management Accounting System or GFMAS was developed in year 2005 and began its operation in 2006 at 25 AG branch offices together with 10 self-accounting departments. This system will enhance operational efficiency and effectiveness to enable AG Department to deliver value-added services especially to Federal Government. This system also will be able to capture accounting transactions and prepare financial statements based on accrual basis of accounting. In order to ensure the effectiveness of the project, The GFMAS Project Management team is adopting the Accelerated System Application Program (ASAP) methodology to manage the implementation activities and deliverables of the project.

GFMAS has been developed with several objectives. First is to improve services quality of AG Department through the usage of the latest information technology application. Second,

it provides a standard mechanism to monitor all government accounting transactions. Third, due to problems arose from the legacy or existing government accounting system, GFMAS emerges to overcome these problems and setbacks. Finally, GFMAS could assist AG Department in providing value added services to government and its agencies in the accounting and financial matters (Kok Ming, 2006).

Obviously, the current move to GFMAS is viewed as an approach to enhance government payment process and accounting for the government's receipts in a fast and efficient manner. In fact, this is in line with AG's Department tagline "Excellent Accounting at Your Service". GFMAS is an integrated system which is capable of allowing acceleration in financial planning, budget control and government accounting. It combines all the accounting functions that cover payment, receipts, remuneration control, unclaimed monies, government loans, loans and advance payment to public sector personnel, investment and preparation of the Public Accounts in one integrated platform.

With this new system, a data warehouse was established called the Business Warehouse (BW). This data warehouse represents the central data repository for the public sector accounting systems managed by AG's Department. The initiative to move from older system to a new GFMAS is an attempt to improve the accounting and financial management in the public sector's departments. At the same time, this move is also seen to be an attempt to increase the quality of data produced and the performance of the accounting systems (Abd Rahman, 2008)

## **1.6 The Benefits of GFMAS to Users**

Apparently, GFMAS provides several benefits to the internal as well as external end user computing. Top management will enable in making a better decision due to reliable and real time data. This in turn will ensure the formulation of better planning and faster reporting to Ministry of Finance (MOF). In addition, as a result of more streamlined process, it has produced less errors and inefficiencies (Jabatan Akauntan Negara, 2006).

Head office will experience more efficient and effective consolidation of accounts for public accounts reporting due to in-built data synchronization and control function. Moreover, this will provides better integration of the treasury, loan and investments functionalities which enables head office to track their budgets, loan and investments made. As compared to the legacy system, GFMAS is also much faster in terms of generation of monthly, quarterly and even ad-hoc reports due to the availability of online and real time data.

Finally, as a result of workload reduced in the consolidation activities at head office, they will have a better focus on more strategic work. From accounting offices view, single-point data entries have enabled an effective and accurate procession. This will create a better internal control which may eliminate manual reconciliation and reduce errors (Jabatan Akauntan Negara, 2006).

External user's feedback and satisfaction are also important for the betterment of the system. Ministries, central agencies, responsibility centres and other beneficiaries are those who get a benefit from GFMAS system. Other than enhancing transparency in accounting operations, GFMAS also ensures faster payments and provides a better channel of access to their transactions status. The controlling officers will enable in understanding current health of organisation through timely consolidated budgets versus actual performance. Subsequently, it will reduce costs and provide a greater budget control. Last but not least, community or public at large will receive a better and more efficient service from the government departments and agencies (Jabatan Akauntan Negara, 2006).

### 1.7 GFMAS Modules

AG DEPARTMENT has developed GFMAS using Systems, Applications, and Product in data Processing (SAP) platform. The application system comprises of eight (8) integrated modules. The modules are Financial & Controlling Module (FICO), Human Resource Payroll (HRPY), Logistics (LO), New Dimension Products (NDP), Government Loans Management Information System (G-LoMIS), Government Unclaimed Moneys Management Integrated System (G-UMIS), Government Advance Loans Monitoring System (G-ALMoS) and Government Securities Management Integrated System (G-SMIS) (Jabatan Akauntan Negara, 2006). The function of each module is depicted in **Table 1** below.

**Table 1: Function of Each Module in GFMAS**

No	Financial & Controlling Module (FICO)	Function
1	General Ledger (GL)	Managing and maintaining Government's general ledger.
2	Accounts Payable (AP)	Managing and records all payments to suppliers, contractors, service providers, government department and agencies including government personnel
3	Accounts Receivable (AR)	Records and maintains all revenues received by the Federal Government
4	Cash Management (CM)	Manages the bank reconciliations process in consideration of all government payments and receipts for the Federal Government
5	Funds Management (FM)	Administers and monitors budgets allocated to the department / RC's
6	Controlling (CO)	Provides reporting of financial transactions for all ministries
7	Asset Management (AM)	Records and manages financial aspects of assets within AG DEPARTMENT
8	Activity Based Costing (ABC)	Allocation of quantity and value based on resource and process drivers

9	Treasury Management (TR)	Records and maintains the Federal Governments long and short term investment
	Human Resource Payroll Module (HRPY)	Function
10	Personnel Administration (PA)	Managing personnel salary data of Federal Governments and agencies
11	Payroll (PY)	Acts as an employee payroll service center for all personnel of the Federal Government of Malaysia
	New Dimension Products Module (NDP)	Function
12	Business Warehouse (BW)	Assists users to quickly and effectively evaluate data for reporting and analysis purposes
13	Business Planning Simulation (BPS)	Assisting in preparation multi perspective strategic budget to enhance organization efficiency and management process
	Customised Module	Function
14	Government Advance Loans Monitoring System (G-ALMoS)	Administer the registration and processing of loans and advances for Federal Government personnel
15	Government Securities Management Integrated System (G-SMIS)	Processes and administers selling, buying and distribution of securities
16	Government Unclaimed Moneys Management Integrated System (G-UMIS)	Managing unclaimed moneys activities received from entities as well as processing of payments to the beneficial owners
17	Government Loans Management Information System (G-LoMIS)	Manages the registrations, disbursements, payments and collections of all (domestic and foreign) loans given and loans taken by the Federal Government and account memorandum
	Logistics Module (LO)	Function
18	Material Management (MM)	Captures all data relating to Purchase Order (PO) and updates budget for commitment accounting

*(Jabatan Akauntan Negara Government Financial and Management Accounting System)*

## 1.8 GFMAS Capabilities

As compared to the previous financial and accounting system employed by AG Department, GFMAS offers some capabilities to their users. Some of the GFMAS capabilities are shown in **figure 3** below:

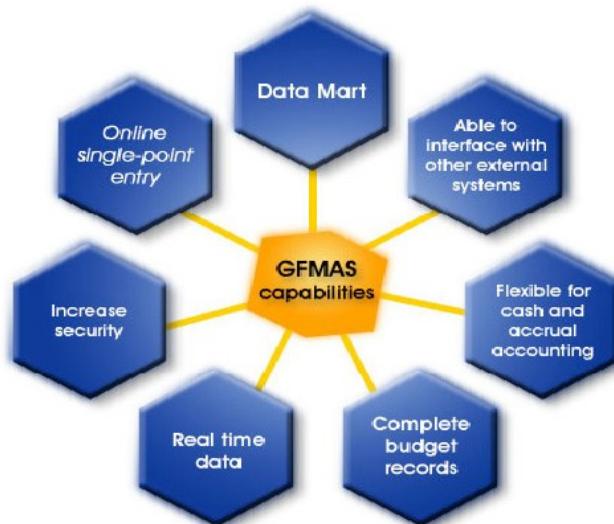


Figure 3: GFMAS Capabilities (Jabatan Akauntan Negara Government Financial and Management Accounting System)

As shown in figure 3, GFMAS has the ability to provide an online single-point entry, increase security, real time data, and completeness of budget records. It also has the capability to be use for cash basis accounting as well as accrual based accounting. It is also able to interface with external systems and created its own data mart. This is where data mining technologies, on request for access to data, can then play a roles in analysing, interrogate, or mining the data for the decision making processes (Abd Rahman, 2008). Data mining has many potential uses in accounting in the public sector, it can assist in dealing with the government's payment to suppliers, and government expenditures on assets for example in monitoring and detecting any unauthorized payments on assets. It would increase a department's efficiencies and effectiveness in their operations and enhance their accountability.

## 1.9 Purpose of the Study

The purposes of this study are as follows:

- i) To determine the level of satisfaction among end users of GFMAS in AGDepartment.
- ii) To examine the effect of seven factors (content, accuracy, ease of use, format, timeliness, reliability of the system, speed of the system, etc) on the level of satisfaction among the end users of GFMAS.

### 1.10 Significance of the Study

It seems clear that there is a lack of study has been conducted in the area of EUCS among government sectors, particularly in AG Department. Thus, this study aims to contribute to the existing body of knowledge in the area of information technology. Furthermore, this study provides and constructs in measuring and evaluating EUCS among the government sectors in Malaysia. Theoretically, this study measures and validates the instrument of Doll and Torzadeh (1988)'s EUCS (with some additional dimensions) amongst government sectors. Therefore, this instrument is very useful in practice, not only for public sector but also for private sector. Indeed, this is an exploratory study in the public sector towards the achievement of the excellent and better performance of accounting system.

The remainder of this paper is organized as follows. A review of related literature on information technology and accounting and end-users computing satisfaction is discussed. Next, the methodology employed in this study, research instruments used and data analysis method involved are described. Finally, the empirical results and discussion of the study are drawn

## LITERATURE REVIEW

### 2.0 Information Technology and Accounting

Over the last decade, the force of information technology (IT) has transformed the business environment. We are in the midst of a paradigm shift from the industrial paradigm of wealth creation to the information paradigm of wealth creation; and technology is the driving force behind these changes (Elliot, 1992). During this same period of time, the field of accounting has undergone an extraordinary transformation relative to its use of IT. IT has increased our ability to capture, store, analyze, and process tremendous amounts of data, increased our ability to change business processes, and has significantly impacted the control process. As a consequence, employers are demanding that their accounting and audit staff possess adequate backgrounds in IT (Strong, Portz & Busta, 2006).

Information technology has been utilized by organisations to enhance productivities and achieve efficiencies. When more information is generated by the accounting software, computerized systems and centralized techniques to store information become more popular, such as databases and data warehouses. However, this has resulted in organisations becoming increasingly more dependent upon their databases to support business processes and decision making (Lin & Edwards, 1996). Therefore, the number of errors in stored information and the organisational impact of these errors are likely to increase (Klein, 1998). Inaccurate and incomplete information may adversely affect the competitive success of an organisation (Redman, 1992). From a business perspective, for example, a financial company absorbed a net loss totaling more than \$250 million when interest rates changed dramatically, and the company was caught unawares (Huang, Yang, Jin & Chiu, 2004)

In particular, there are consequences of poor information quality in accounting information

systems. For example, errors in an inventory database may cause managers to make decisions that generate over-stock or under-stock conditions (Bowen, 1993). One minor information entry error, such as the unit of product/service price, could go through an organisation's accounting information system (AIS) without appropriate information quality checks and cause losses to an organisation and/or harm its reputation. Therefore, there is a need for an understanding of the key issues that affecting accounting information quality.

## **2.1 End User Computing Satisfaction (EUCS)**

Many researchers defined end user computing based on their own objectives and setting of the study. Ives, Olson and Baroudi (1983) defines User Information Satisfaction (UIS) is one such evaluation mechanism as an extent to which users believe the information system available to them meets their information requirements. Chin and Lee (2000) defined end-user satisfaction with an information system as an overall affective evaluation and end-users are related with his or her experience in the information system. They stated that the term "experience" could be made more specific to focus into different aspects related to the information system such as computing or training.

End-user computing (EUC) refers to direct interaction with application software by managerial, professional, and operating level personnel in user department (Doll & Torkzadeh, 1989). Meanwhile, EUCS is the affective attitude towards a specific computer application by someone who interacts with the application directly. End-user satisfaction can be evaluated in terms of both the primary (application) and secondary user's roles (inquiry and decision support application). This study deployed Doll and Torkzadeh definition of the end user computing and EUCS. The end user computing in this study is the people who interact and use GFMAS such as accountant, financial officer, information system officer, data processing operator, account clerk and etc. Those end users should be able to interpret the report as in needed by the organisation. In general, they were asked to reflect their satisfaction or perception towards GFMAS in their own organisation.

The scope of the discussion is related to EUCS; the previous factors that contribute to the EUCS, (Doll & Torkzadeh, 1989); i.e., content, accuracy, format, ease of use, and timeliness and the modification made by Chin and Lee (2000), i.e. satisfaction with system speed, and system reliability (self developed). This model will become a fundamental guideline to examine factors contributing to EUCS generally in government sector and specifically at AG Department.

## **2.2 Theoretical Framework of EUCS Towards GFMAS**

The Dependent Variable (DV) for this study is overall EUCS. The items, which represent whole EUCS, are combined from every EUCS dimensions. Doll and Torkzadeh (1988) previously used this method in their initial study of EUCS. The seven factors of End User Computing Satisfaction (EUCS) consist of content, accuracy, format, ease of use, timeliness, speed of the system and reliability of the system.

## 2.3 Research Hypotheses

Several hypotheses have been developed to illustrate whether there are significant effect between the seven factors and end-users satisfaction towards GFMAS. Those hypotheses are as follows:

H1: There is a significant effect between content and end-users' satisfaction towards GFMAS.
H2: There is a significant effect between accuracy and end-users' satisfaction towards GFMAS.
H3: There is a significant effect between format and end-users' satisfaction towards GFMAS.
H4: There is a significant effect between ease of use and end-users' satisfaction towards GFMAS.
H5: There is a significant effect between timeliness and end-users' satisfaction towards GFMAS.
H6: There is a significant effect between system speed and end-users' satisfaction towards GFMAS.
H7: There is a significant effect between system reliability and end-users' satisfaction towards GFMAS.

## RESEARCH METHODOLOGY

This study applies multi method data collection with the combination of qualitative and quantitative approach. Both methods are used in this study to gather comprehensive view about satisfaction and perception of end users towards GFMAS that eventually would generate a holistic data in order to produce all inclusive results.

### 3.0 Research Respondents

The research respondents for this study consist of two groups namely executive and non-executive of AG Department staffs in Federal Territory of Labuan, Kota Kinabalu, Keningau, Tawau and Sandakan. This study employs convenient sampling because staffs in each branch have been determined based on their experience of GFMAS usage. Initially, we expect to distribute approximately 167 respondents. However, we received 140 respondents only which represent 84% of the total sample.

**Table 2: Respondents**

AG Department (Branch)	Number of staffs for each branch	Number of respondents
Tawau	20	14
Sandakan	25	23
Kota Kinabalu	80	73
Federal Territory of Labuan	22	20
Keningau	20	10
<b>Total</b>	167	140

### 3.1 Research Questionnaire

The questionnaire is divided into two sections. The first section consists of the dimension of EUCS. Meanwhile, the second section captures personal information of respondent. For the first section, it is divided into seven parts namely: (1) Part A -Content, (2) Part B - Accuracy, (3) Part C - Format, (4) Part D - Ease of Use, (5) Part E - Timeliness, (6) Part F - System Speed and (7) Part G – System Reliability. The second section is about the personal information of the respondent. These include their gender, education background, position, year of service (tenure), attending computerised accounting course and computerised accounting skills.

### 3.2 In-Depth Interviews

In-depth interviews have been conducted among executives (i.e. branch director) of AG Departments to identify issues of satisfaction towards GFMS application. This qualitative method is needed because some issues could not be addressed, captured and measured by the quantitative method. Thus, the combination of two methods probably would generate a holistic data to produce sound findings and results.

### 3.3 Analysis of Data

In analyzing the data, this study employs SPSS (Statistical Package for Social Science) software for windows namely Descriptive Statistics, Correlation and Regression Analysis. The study also tests reliability of the instrument so that it enables to produce a robust result.

## FINDINGS AND RESULTS

### 4.0 Respondent Profiles

A total of 33.6 percent are male respondents. More than half of the respondent (55.8 percent) work as Administrative Assistant and Accountant Assistant, followed by Senior Accountant Assistant (10.7 percent). 74.3 percent of them have been working with the organization for 15 years and below. Meanwhile, only 8.9 percent of them have been working between 25 to 35 years.

The survey also shows that 48.6 percent of the respondents are SPM/STPM holders and 32.1 percent are Diploma holders. More than 50 percent of the respondents have attended computerised accounting course and 56 percent had additional computerised accounting skill such as LOTUS 123 and UBS (**Table 3**).

**Table 3: Socio-demographic Profiles of Respondents**

Profile		Frequency	Percent
Gender	Male	47	33.6
	Female	93	66.4
Education Level	Degree	27	19.3
	Diploma	45	32.1
	SPM / STPM	68	48.6
Position	Director	2	1.4
	Deputy Director	1	.7
	Chief of Assistant Director	1	.7
	Assistant Director	4	2.9
	Accountant	3	2.1
	Chief of Administrative Assistant	1	.7
	Finance Assistant Officer	1	.7
	Senior Accountant Assistant	15	10.7
	Information System Officer	1	.7
	Information Technology Assistant Officer	4	2.9
	Data Processing Operator	12	8.6
	Data Processing Assistant Operator	2	1.4
	Administrative Officer	1	.7
	Administrative Assistant	39	27.9
	Accountant Assistant	39	27.9
	Account Clerk	4	2.9
Year of Service With the Organization	less than 3 years	44	31.4
	3-15 years	60	42.9
	15-25 years	24	17.1
	25-35 years	12	8.6
Attending Computerised Accounting Course	Yes	81	57.9
	No	59	42.1
Additional Computerised Accounting Skill	UBS	61	43.6
	LOTUS 123	18	12.9
	MrAccounting	5	3.6
	QuickBook	1	.7
	Others	55	39.3

#### 4.1 Descriptive Analysis

Descriptive statistics such as minimum, maximum means and standard deviations are obtained for the interval-scaled factors and dependent variable. The results of the descriptive analysis are shown in **Table 4**

**Table 4: Descriptive Analysis**

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Content	140	1.67	5.00	4.0064	.63373
Accuracy	140	2.43	5.00	3.9582	.56432
Format	140	1.86	5.00	4.0061	.63954
Ease of Use	140	1.86	5.00	3.9551	.64004
Timeliness	140	2.50	5.00	3.5381	.56132
System Speed	140	1.00	5.00	3.7738	.63726
System Reliability	140	1.00	5.00	3.8684	.60562
Overall Satisfaction	140	2.00	5.00	4.0520	.65212

From the results, mean of the satisfaction with the content is 4.0064 on seven-point scale, while mean of the satisfaction with format is 4.0061. The other five factors and overall satisfaction's mean are somewhat enriched (accuracy = 3.9582, ease of use = 3.9551, timeliness = 3.5381, system speed = 3.7738, system reliability = 3.8684 and overall satisfaction is 4.0520). These results indicate that even though users are still in the process of learning and interacting with GFMAS, the level of satisfaction is relatively high.

#### 4.2 Reliability Analysis

A reliability analysis is carried out to check for the underlying dimension of the EUCS variables. A rule of thumb suggests that the acceptance Cronbach alpha value should exceed 0.5 (Hair, Anderson, Tatham & Black, 1998). **Table 5** depicts a summary of the Cronbach's alpha values. All factors exhibit a Cronbach's alpha coefficient of at least 0.587 indicates that the questionnaire has attained rather high level of reliability. Hence, all variables are retained. Among the factors, format factor has the highest ranking of Cronbach alpha of 0.936, followed by the content factor with 0.933. The timeliness factor has the lowest ranking with 0.587.

**Table 5: Reliability Analysis**

Variable	Cronbach's Alpha	N of Items
Content	.933	9
Accuracy	.889	7
Format	.936	7
Ease Of Use	.915	7
Timeliness	.587	6
Speed	.808	6
Reliable	.826	7

### 4.3 Correlation Analysis

In this paper, correlations between the seven selected factors (content, accuracy, format, ease of use, timeliness, system speed, system reliability) and overall satisfaction on GFMAS have been tested and measured. Relatively, high correlations were found between the seven factors and overall satisfaction towards GFMAS. The correlation matrix is displayed in **Table 6**. As can be seen, satisfaction on GFMAS correlates positively with content, accuracy, format, ease of use, timeliness, system speed and system reliability. Specifically, the relationships between these variables were found to be critical as it influence satisfactory level among the end users toward the GFMAS.

**Table 6: Correlation among Variables**

	Mean	SD	Overall Satisfaction	Content	Accuracy	Format	Ease Of Use	Timeliness	Speed	Reliable
Overall Satisfaction	4.0520	.65212	1.000							
Content	4.0063	.63371	.664	1.000						
Accuracy	3.9582	.56432	.566	.660	1.000					
Format	4.0061	.63954	.692	.649	.617	1.000				
Ease Of Use	3.9551	.64004	.652	.571	.574	.685	1.000			
Timeliness	3.5381	.56132	.339	.312	.278	.337	.373	1.000		
Speed	3.7738	.63726	.655	.446	.425	.487	.566	.478	1.000	
Reliable	3.8684	.60562	.486	.466	.360	.387	.379	.322	.498	1.000

### 4.4 Regression Analysis

Regression analysis is performed to reveal how seven factors (content, accuracy, format, ease of use, timeliness, system speed, system reliability) influence satisfactory level among end users toward the GFMAS. The results of this analysis are presented in Table 4.6 below. The overall explanation power of the seven factors reached a sufficient level as almost 70 percent ( $R^2=0.670$ ) of the variances in the end-users' satisfaction towards GFMAS could be predicted through the factors (refer **Table 7 and Table 9**).

**Table 7: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.819 <sup>a</sup>	.670	.653	.38421

**Table 8: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.039	.295		.133	.895
Content	.253	.078	.245	3.229	.002
Accuracy	.020	.083	.017	.240	.811
Format	.273	.080	.268	3.434	.001
Ease of use	.131	.077	.128	1.687	.094
Timeliness	-.069	.067	-.059	-1.026	.307
Speed	.337	.070	.329	4.794	.000
Reliability	.073	.066	.068	1.113	.268

Evidently, **content** significantly influences or affects end-user satisfaction towards GFMAS ( $t=3.229$ ,  $p=0.002$ ). The system does provide good information as end-user is able to print reports that meet the information processing needs. Besides, unlike the legacy system, GFMAS is able to integrate all relevant information from the other database system (Jabatan Akauntan Negara Government Financial and Management Accounting System, Bahagian Pengurusan Operasi Cawangan, Kota Kinabalu, Sabah, 2006). **Table 8** also shows that **format** ( $t=3.434$ ,  $p=0.001$ ) significantly affects end-user satisfaction towards GFMAS. In the other words, the output is produced and presented by GFMAS in a clear manner with proper standard and user-friendly format. In addition, **Table 8** also infers that **system speed** is proved to have a significant effect on end-user satisfaction towards GFMAS ( $t=4.794$ ,  $p=0.000$ ). In other words, it indicates that speed of the computerised accounting system is important in ensuring end-user satisfaction towards GFMAS as the system is able to process a huge number of reports faster as compared to BAS system.

However, **accuracy** ( $t=0.240$ ,  $p=0.811$ ), **ease of use** ( $t=1.687$ ,  $p=0.094$ ), **timeliness** ( $t=-1.026$ ,  $p=0.307$ ) and **system reliability** ( $t=1.113$ ,  $p=0.268$ ) were found to have no significant effect on end-user satisfaction towards GFMAS. This indicates that accuracy, ease of use, timeliness and system reliability are weak predictors in explaining end-user satisfaction towards GFMAS. It has been noticeable that the computerised accounting system is inevitable from error such as inconvenient downtime while extracting information and reports. In addition, as explained before, this system is relatively new and can be considered at an infant stage. Thus, technical error and mistake cannot be avoided easily. Therefore, based on the regression analysis (**Table 8**) *H1*, *H3* and *H6* were supported while *H2*, *H4*, *H5* and *H7* were rejected.

**Table 9: Result Analysis**

Hypothesis	Result
H1: There is significant effect between content and end-users' satisfaction towards GFMAS.	Supported
H2: There is significant effect between accuracy and end-users' satisfaction towards GFMAS.	Rejected
H3: There is significant effect between format and end-users' satisfaction towards GFMAS.	Supported
H4: There is significant effect between ease of use and end-users' satisfaction towards GFMAS.	Rejected
H5: There is significant effect between timeliness and end-users' satisfaction towards GFMAS.	Rejected
H6: There is significant effect between system speed and end-users' satisfaction towards GFMAS.	Supported
H7: There is significant effect between system reliability and end-users' satisfaction towards GFMAS.	Rejected

#### 4.5 Feedback from Interviewees

The satisfaction on accuracy of information in CAS depends on how far CAS can provide accurate information and may satisfy the user. The accuracy might be achieved if system developer creates the accounting system based on organisation requirements. For example, the outputs that are going to be produced by GFMAS must fulfill the needs of AG Departments requirement. According to the discussion with senior assistant director of AG on 23rd of January 2009, the accuracy of information is still in the progress of improvement because the failure of providing the right and accurate information is still occurred. Beside that, the system has produced inaccurate reports because system developers always change GFMAS module once problem occurred. When developers' team always change the module while at the same time they are not really understand the operation and requirement of GFMAS, this has lead to incorrect report been produced and eventually it does not fulfill user's need.

End users employ and use GFMAS by entirely following the instructor manual provided by system developer. It means that each staff can still use GFMAS if they follow all the requirements and procedures. However, most of the staffs reported that they need to contact solution manager if any problem occurs while using and conducting transaction through this computerized accounting system. Most of staffs reported that they are not satisfied with the system manual when they need to refer should they meet any difficulty using GFMAS.

Then, interviewees also perceived that the solution manager took some time to overcome and solve the problem. Furthermore, in terms of ease of use of GFMAS application, they are not really satisfied with user interface in processing the report at the end of each month. The process of producing the report will take a long time. They also perceived that GFMAS is not user-friendly because they need to refer to the account code when they need to key in data and access it.

Even though end users at AG Department admit that GFMAS operates much faster as compared to BAS, they are not really satisfied with GFMAS in terms of producing up-to-date information. Accordingly, the information produced by GFMAS is too old to be used for the

decision making purpose. This is because GFMAS is still at infant stage and definitely a gradual improvement is needed to enable GFMAS to produce up-to-date information. Apart from that, they need to ensure that the system is able to operate and process data timely and accurately.

The reliability of GFMAS is also one of the factors that did not influence user satisfaction because end users are not able to measure the effectiveness and efficiency of the system. AG departments still need to improve the capability and competency of staffs in using the system effectively and efficiently. Moreover, some interviewees are not really satisfied in terms of reliability and security because GFMAS can be accessed by any staff in the department. Those who want to use the system only needs to provide authorization letter from the department. Noticeably, this procedure is quite risky due to sacrificing the security and reliability of the system when every body can access it easily.

Overall, end users perceived that GFMAS is better than BAS because the process of payable and receivable are much faster, users can detect the defection, the information can be accessed easily and the report can be produced and printed timely. Beside that, the overload of task for human resources can be reduced because the processing of task is short as compared to BAS.

## CONCLUSION

### 5.0 Conclusion

This study attempts to determine the level of satisfaction among 140 end users of GFMAS at AG Department specifically in East Malaysia (Labuan and Sabah branches). Besides, this study also examines the effect of seven factors (content, accuracy, ease of use, format, timeliness, system reliability, system speed, etc) on the end users satisfaction towards GFMAS. In addition, this paper also tests any difference of satisfaction among demographic variables (gender, education background, position, year of service (tenure), attending computerised accounting course and additional skills) of GFMAS users.

Overall, this study is able to evaluate strong relationship between seven EUCS factors and satisfaction towards GFMAS. Satisfaction on GFMAS correlates significantly with content, accuracy, format, ease of use, timeliness, speed of the system and reliability of the system. Specifically, the relationships between these variables were found to be crucial as it influence satisfactory level among the end users towards GFMAS.

However, regression analysis reveals that only content, format and speed factors have a significant effect on end users satisfaction towards GFMAS. In contrary, the other four factors namely accuracy, ease of use, timeliness and reliability have no significant effect on end users satisfaction towards GFMAS. This indicates that the latter factors are weak predictors in explaining end-user satisfaction towards GFMAS. These weak predictors might also been

contributed by the nature of GFMAS itself because it is still new for the department as well as end users themselves.

### **5.1 Managerial Implications**

The suggested model has a number of implications for research and practice. However, this study extended Doll and Torkzadeh (1988) and Chin and Lee (2000) works by considering the additional dimension in EUCS model. The study demonstrates the EUCS factors in the government sectors specifically AG department. The study also suggests that content, accuracy, format, ease of use, timeliness, speed of the system and reliability of the system must be emphasized to the efficiency and effectiveness of GFMAS. Thus, system developers must address a rich system feature that is able to ensure the content and format of the report, powerful system speed and functionality as important objectives when developing systems.

Even though the finding of this study might be identical to other AG Departments, it could not be generalized to the other AG departments especially in Peninsula Malaysia. This is due to the different geographical location whereby AG departments in Peninsula Malaysia are close to AG headquarters thus those departments and their staffs are expected to receive more information and expertise pertaining to GFMAS.

### **5.2 Limitations**

The number of the sample is relatively small. The small sample size is limited only 140 end-users of GFMAS. This small sample size may be jeopardizing the population of the end user among the AG departments. The aspect of time also affected the data collection method; i.e., by using questionnaire. A respondent who is not particularly interested in answering the questionnaire is more likely interspersed to answer the question. This is because some of them are very busy with their tasks and duties. As a result, they did not answer the questionnaire genuinely.

### **5.3 Future Research**

The future study can be expanded to other AG department particularly in Peninsular Malaysia. This might also increase the sample size because a larger sample size would be required to ensure that the generalization ability of research. In addition, the consideration of whole branches of AG department would ensure the overall perceptions and views of GFMAS users. For further action, researchers need to overcome the problem that might be happened in each department to improve the complexity of departments' transaction and operation and for the betterment of all AG stakeholders.

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## The Success Factors of the Public Accounts Committee (PAC) in Malaysia: The Public Perspective

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### Abstract

This paper reports results of an investigation on the perceptions of the public on success factors of the Public Accounts Committee (PAC) in Malaysia. The study examines public perceptions with a total of 80 respondents responded to the survey questionnaire. The finding showed that there were five top factors that the public perceived could contribute to the success of the PAC. These include the power to make recommendations and publish conclusions, balanced representation with close working relationship of all political parties in the committee, power to hold in camera meetings, having a clear focus on holding the government accountable for its spending and its stewardship over public assets, and finally a good relation with other parliamentary oversight mechanism such as the budget committee.

**Keywords:** Public Accounts Committee (PAC); Public Sector; Malaysia.

### Introduction

The Public Accounts Committee is one of the independent and significant committees of the Parliament in operation to oversee the administration of public fund and accountable government (ASOSAI, 1998; INTAN, 2000). In a broader sense, the PAC's role is to assist the Parliament in holding the government to account for its use of public funds and resources through examination of public accounts. The PAC has a critical role in ensuring that the accountability and effective governance of the public sector is practiced in government dealings (INTAN, 2000; Pelizzo, Staphenurst, Sahgal and Woodley, 2006; Pelizzo, 2011).

However, in the past few years, there were questions and criticisms directed towards the PAC in Malaysia with regards to its practices. For example, it was reported in Malaysian Business (2005) that the PAC chairman, Datuk Shahril Abdul Samad admitted that the PAC cannot function effectively due to resources and support constraints. Also in the report, the former opposition leader, Mr. Lim Kit Siang concurred that the PAC failed to play its watchdog rule because he argued that the Auditor General Report was never read, noticed or debated. Thus, as highlighted by the President of Transparency International Malaysia, Datuk Param Kumarasamy, a study on the PAC's performance in Malaysia would start the effort to strengthen the accountability of the PAC with respect to the financial accountability of the government (Malaysian Business, 2005). Other than that, there were also calls for researchers to conduct research on the operations of PACs in Westminster-type of jurisdictions other than the UK

and Australia (Jacobs, Jones and Smith, 2007; Degeling, Anderson, and Guthrie, 1996). Against this background, the current study extends prior studies by adding investigation on the perceived success factors of the PAC from the public perspective.

This study has theoretical and practical significance. Firstly, the study will contribute to the existing body of knowledge in terms of providing a better understanding about the important factors towards successful PAC practices in developing countries, specifically in Malaysia. Secondly, this study can inform the Parliament and the government of Malaysia as to how the PAC can be structured to ensure its effectiveness from the public perspective.

The rest of this paper is structured as follows. The next section presents relevant literature to highlight the roles and functions of the PAC and important success factors in other parts of the world. The second section discusses the methodology used in this study. The third section reports the results of the study with some conclusions in the final section.

## Literature Review

### The Public Accounts Committee (PAC) in Malaysia

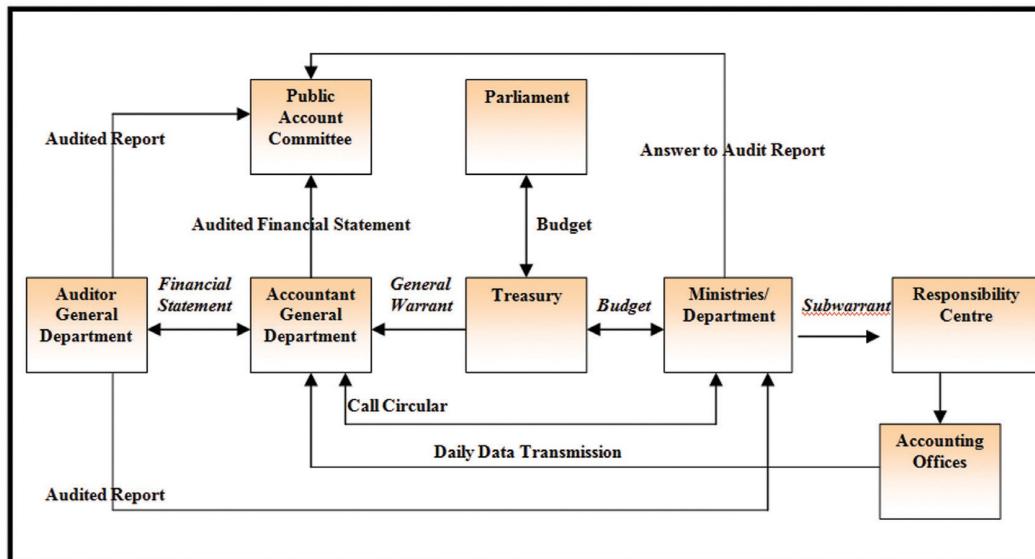
In Malaysia, the PAC is one of the selected committees of the Parliament which is responsible in enhancing the accountability in the financial operations of government. The PAC is established at the federal and state level. For the purpose of this study, the emphasis is on the PAC at federal level. The PAC carries out its works based on the *Standing Orders of the Dewan Rakyat (House of Commons)*. According to the Standing Orders (SO), the PAC is established for the purpose of examining:

- (a) The accounts of the Federation and the appropriation of the sums granted by the Parliament to meet public expenditure;
- (b) Such accounts of public authorities and other bodies administering public funds as may be laid before the House;
- (c) Reports of the Auditor-General lay before the House in accordance with Article 107 of the Constitution;
- (d) Such other matters as the Committee may think fit, or which may be referred to the Committee by the House (SO 77(1), Twelfth Publication, 2008, p.260).

The PAC forms part of the accountability structures created in the Malaysian Parliamentary system (See Figure 1). It interacts and communicates with various independent and government bodies in carrying out its duties. The primary source of information for the PAC about the financial accountability of the government is basically from the audit report produced by the Auditor General. This audit report normally includes the findings from the financial and compliance auditing as well as performance auditing. Another source of information is from the audited financial statements provided by the Accountant General Department. The

PAC performs its duties by examining an Auditor-General annual reports or by initiating its own investigations upon a case that of public interest. In many circumstances, it will call upon the government agencies to answer the inquiries. Finally, the PAC comes out with recommendations for improvements of the respective government agencies.

**Figure 1: The Chain of Accountability in the Malaysian Parliamentary System**



Source: Accountant General's Department of Malaysia website

In terms of membership, the PAC members are appointed as soon as each term of parliamentary sessions commences (SO 77(2)). The committee comprises members from ruling party, the opposition, and also independent parties with the minimum number of six and not more than 12 members. Nevertheless, the normal practice is that the chairman is the representative of the government party and the vice chairman is from the opposition party. The SO also states that a cabinet minister cannot become a member or a chairman of the PAC during the tenure as a minister. This is basically to safeguard the independence of the committee. In terms of the powers, this committee has the power to summon the presence of anyone or request the issuing of letters, records, and to issue statements to the committee from one time to time.

Literature review shows that a number of empirical studies have been conducted in relation to the success factors or on the effectiveness of the PACs around the world. The pioneer of the study on this topic was conducted by the members of the Canadian Council of the Public Accounts Committees (1991) with the purpose of identifying the conditions and factors of the effective performance of PACs in all Canada's national and provincial legislatures. The results suggest that the clear mandate and term of references, the powers of a PAC, the composition of committees and operating style, its relationship with the Auditor-General, the executive, and the media, and the PAC's resource requirements are the important characteristics for an effective PAC.

A decade later, McGee (2002) reported a result of survey on the PAC practices of 70 parliaments

in Commonwealth countries. Similar to previous study, the purpose was to examine the PAC practices and 'whether they fulfill expectations as important guarantors of good government' (McGee, 2002, p.4). The report recommends that the PACs need to improve in three important aspects to fulfill the expectation on them as guarantors of good government, namely:

(i) Capacity building

A constant theme is needed to improve institutional capability; that is the ability of the Parliament, the PACs, and the Auditor-General's offices to carry out their functions by being provided with sufficient resources and having adequate training as well as access to the expertise that they require.

(ii) Independence

Particularly for the Auditors-General it is essential that they are free from any political or legal constraint that could inhibit them in carrying out their duties diligently and impartially.

(iii) Information exchange

The PACs in particular need to have the means to exchange information and ideas so as to keep them up-to-date with important developments, changing standards, and best-practices as they emerge (McGee (2002), 6).

Another significant study in this area was carried out by Stapenhurst et al., (2005). The researchers conducted a questionnaire survey followed by interviews with the chairman to investigate the success factors of the PACs in 33 national and state/provincial parliaments in various Commonwealth countries. According to them, 'the success of PACs does not depend only on institutional design, however, but also on the behavior of committee members and on the functioning of the committee itself'. In terms of institutional design, the success factors are identified as: (1) the PAC has a clear power and mandate, (2) the focus is on government financial activity and accountability, (3) has the power to investigate all past and present government expenses, (4) has the power to check implementation of recommendations, and (5) a close working relationship with the Auditors General. For behavioral aspect, the success factors were: (1) the information availability and bipartisanship/non-partisanship, (2) the PAC members need to study related government documents and be prepared for the meetings, (3) keeping transcripts of their meetings, (4) publication of their conclusions and recommendations, and (5) involvement of the public and media in their works.

Based on the success factors identified in the above studies, CCAF-FCVI (2006) also proved that some factors lead to effective committee performance. The CCAF-FCVI sets out a research report on the mechanisms in strengthening PACs. The report suggests that having a formal and clear framework of power and practices with the capacity to transform the power into practices and a strong committee leadership are essential requirements for a successful PAC.

A similar study was conducted by KPMG Australia in 2007 with the aim to identify the structures, responsibilities, and practices of PACs across Australia and New Zealand jurisdictions. They concurred that various procedures and practices developed by the PACs in these countries

were beneficial to other PACs with similar jurisdictions. These include the power to investigate the report, membership and leadership, and reporting findings and recommendations. The report concluded that there was no structure, terms of reference or set of working practices that could be described as a practice to be followed in establishing and operating an effective PAC.

In Malaysia, to this date, there is no study examining the success factors of the PAC at the federal level. Nevertheless, a recent study conducted by Rose and Napsiah (2009) on the functions of state's PACs is worth to be mentioned. Specifically, they examined the work of the PACs in reviewing and reporting states financial statements based on one of 2005's PAC Reports. They found out that there was an issue of timeliness of all states PAC Report which was basically due to PACs non-review of current audited financial statements. Consequently, the PAC's recommendations were also outdated and not relevant. This implied that the PACs at the state level are not effective in executing their functions. This study suggests that the PACs need to improve their composition, capacity, and also work process to boost their work and reputation.

### **Research Methodology**

For the purpose of the study, a survey questionnaire was employed as the main source of data collection. This questionnaire was adopted from Staphenurst et al (2005) study and was further extended by adding questions to solicit respondents' level of knowledge of the PAC. The survey instrument was divided into three sections. Section A enquired about respondents' personal profile namely their gender, age, level of education, and occupation. Section B enquired about respondents' level of knowledge of the PACs' existence and its source of powers. Lastly, Section C focused on PACs' attributes, specifically their composition, power and practices impact on their governing performance. The questions in sections B and C were rated on a 5-point like scale where 1 = "very important" or "strongly agree" and 5 = "not important" or "strongly disagree". In section C, one open-ended question was directed to the respondents to solicit their suggestions on other important success factors which may not included in the questions.

In total, 150 respondents were targeted by using convenience random sampling. These respondents were specified in such that they must aware on the existence of the PAC. Out of this total, 41 respondents did not know on the existence of the PAC and 29 rejected the request to participate in the study. At the end, 80 questionnaires were used for the analysis.

### **Findings and Discussions**

A background analysis of the respondents was carried out based on four criteria namely gender, age, level of education, and sector of occupation. Table 1 shows that the demographic characteristics of the sample were evenly spread between male (47.5%) and female (52.5 %). In relation to age, majority of the respondents (76.3%) fall under the age categories of 21 until 30 years old. Nearly half of the respondents have bachelor degree (46.3%), masters (16.2%)

and Phd (5%). Only 32.5% has SPM and diploma. This might indicates that in general, the respondents have an adequate and reasonable level of knowledge. Forty seven of the respondents (58.8%) are working in the public sector and the rest are in the private sector (33.7%), self-employment (5%) and unemployed (2.5%).

**Table 1: Respondent's Profile**

Gender	Frequency	Percent
Male	38	47.5
Female	42	52.5
Total	80	100.0
Age		
21 – 30	61	76.3
31 – 40	4	5.0
41 - 50	9	11.3
Above 51	6	7.5
Total	80	100.0
Level of Education		
Sijil Pelajaran Malaysia (SPM)/Diploma	26	32.5
Bachelor/Professional qualification	37	46.3
Masters	13	16.2
Doctor of Philosophy (PhD)	4	5.0
Total	80	100.0
Sector of occupation		
Public sector	47	58.8
Private sector	27	33.7
Self-employed	4	5.0
Unemployed	2	2.5
Total	80	100%

### Respondents' Knowledge of the PAC

In section B, the respondents were asked on their knowledge regarding the existence of the PAC and the statutory provision on the PAC's conduct. About 57.5 percent of the respondents answered yes; they actually know that the PAC is a working committee of the Parliament and have heard about it from the newspapers, internet, television, or radio. While 42.5 percent of them did not know that the PAC was under the Parliament or Legislative power. When they were asked whether they know which statutory provision the PAC is under, only 23.8 percent of the respondents answered yes. The other 76.3 percent did not know about the provision

related to the PAC. On another question asking whether they know that the PAC can give response to any issue relevant to the public interest, 51.3 percent agreed and answered yes to the question. The results on these statements indicated that a significant number of respondents did not have extensive level of knowledge of the PAC.

Table 2 provides the responses from the respondents on the level of importance played by the PAC in ensuring good accountability of the federal government. The majority, 51.3 percent, indicated that the role of the PAC in overseeing government account is very important. 22.5 percent of them believed that the PAC is important, and another 22.5 percent were neutral. Most importantly, a majority of the respondents agreed the PAC is a key mechanism to inspect and monitor the spending and management of the public funds by government agencies.

**Table 2: The Importance of the PAC**

	Frequency	Percent
Very Important	41	51.3
Important	18	22.5
Neutral	18	22.5
Less Important	1	1.2
Not Important	2	2.5
Total	80	100.0

### Perception on the Composition of the PAC

With regard to the first issue of this study, the respondents were asked to give their views on the composition of the PAC. Based on the responses obtained, more than a majority of the respondents (combined) chose "important" and "very important" as their opinions on the importance of the PAC composition to have a balanced in the group of representatives from all major political parties. Only less than 6.5% of the respondents considered this statement to be both less and not important. Similarly, more than a majority of the respondents (combined) agreed it is both important and very important for the PAC membership to exclude Cabinet ministers. This might imply that the respondents were very concerned with the independence of the PAC and thus the individuals who can be associated with the government should be part of the PAC members.

On another issue, almost half of the respondents were indifferent on the appointment of the chairman of the PAC from the opposition party. This finding is consistent with the studies of McGee (2002), which found that the presence or absence of the government chairman would not be a deciding factor in determining the independence of the work program and enquiries of the PAC studies. Similarly, about 38.8% of them also perceived that it does not make any difference if the PAC members are from different field of expertise.

**Table 3: Responses on the Degree of Importance on the Composition of the PAC**

	Very Important	Important	Neutral	Less Important	Not Important
Balanced representative of all major political parties on the committee.	40.0	27.5	26.2	3.8	2.5
Membership should exclude ministers of the Cabinet.	23.8	37.5	23.8	12.5	2.4
The Chairman of the PAC should come from the opposition.	17.5	16.2	43.8	12.5	10.0
Members should consist of individuals from different field of expertise	15.0	18.7	38.8	26.3	1.2

### Perception on the Roles and Powers of the PAC

Ten statements were constructed to gather public views on the corresponding issue. Out of the ten statements, three of them were ranked by the public as a very important factor, which influences the success of the PAC. 45 percent of the respondents believed that it is very important for the PAC to have clear focus on making the government accountable for its spending and stewardship of tax payers' money. Furthermore, 40 percent of them agreed that it is very important for the PAC to be given the authority to make recommendations as well as publish its conclusion to the public. 31.3 percent of them answered it is very important for the PAC to be given the power to hold in camera meetings (meetings that are tape-recorded) when dealing with sensitive or national security issues.

The other 7 factors that were ranked as important include having a permanent reference, power to call independent witnesses and force them to answer, power to hold press conference, and power to choose subjects for examinations without any government direction or advice. The results are shown in Table 4 below.

**Table 4: Responses on the Degree of Importance of the Power of the PAC**

Power of the PAC	Very Important	Important	Neutral	Less Important	Not Important
Clear focus on holding the government accountable for its spending of taxpayers' money and its stewardship over public assets.	45.0	36.3	15.0	2.5	1.2
Clear focus on policy administration and not judging on whether the policies are good or bad.	15.0	42.5	27.5	12.5	2.5
Having a permanent reference to examine the Public Accounts.	26.2	51.3	21.3	1.2	0
Having a permanent reference to examine all reports by the Auditor General.	23.8	46.3	26.2	2.5	1.2

Power to make recommendations and publish conclusions.	40.0	35.0	21.3	1.2	2.5
Power to call independent witnesses and force witnesses to answer questions.	36.3	40.0	17.5	5.0	1.2
Power to request (but not force) the legislative auditor to perform specific reviews or tasks.	30.0	42.5	33.8	6.2	0
Power to hold press conferences and issue press releases.	16.3	38.8	37.5	7.4	0
Power to hold meetings and conduct enquiries even when the legislature is not in session.	25.0	41.3	22.5	10.0	1.2
Power to hold in camera meetings, when dealing with sensitive or national security issues.	31.2	28.8	28.8	10.0	1.2
Power to choose subjects for examination without government direction and advice.	26.2	33.8	28.8	11.2	0

### Perception Towards the PAC Practices

Seven statements were designated to capture public view on the good practice that the PAC should have. Only two of these factors have been rated by the respondents as very important. 36.3 percent of the respondents believed that the PAC success depends heavily on the close working relationship amongst its members from different political parties, whilst 38.8 percent of the respondents ranked good relationship with other parliamentary oversight mechanisms such as the budget committee as very important to the PAC success.

**Table 5: Responses on the Degree of Importance of the Practice of the PAC**

Practices of PAC	Very Important	Important	Neutral	Less Important	Not Important
Close working relationship between members from different political parties.	36.3	33.8	23.8	2.5	3.6
Independent technical expertise and research support for hearings.	5.0	43.8	17.5	27.5	6.2
Good relations with other parliamentary oversight mechanisms such as the budget committee.	38.8	37.5	17.5	3.7	2.5
Transcripts kept of all hearings and meetings.	16.2	51.3	42.5	3.7	2.5
Report to the legislature annually, and ask for report to be debated.	25.0	36.3	35.0	2.5	1.2
Having PAC members with at least 2 years of prior Committee experience.	17.5	36.3	38.8	7.4	0
Effective follow-up procedures to determine if action has been taken to implement the PAC's recommendations.	28.8	46.3	21.2	2.5	1.2

The other four factors that were ranked as important by respondents were having independent technical expertise and research support for hearings, keeping all the transcripts of all hearings and meetings, reporting to the legislature annually and asking for the report to be debated, and finally having effective follow-up procedures to determine if action has been taken to implement the PAC's recommendations. However, 38.8% of the respondents were somewhat undecided with regard to the statement whether having the PAC members with at least 2 years of prior committee experience is important or not.

### Achievement of the PAC

To obtain more feedback from the respondents on the success of the PAC, these respondents were asked to indicate the extent of the agreement for a number of statements on the achievements of the PAC for the past 5 years. The results are shown in Table 6.

**Table 6: The Achievements of the PAC in the Past 5 Years**

Achievements	Strongly Agree	Agree	Slightly Agree	Disagree	Strongly Disagree
Government responds favorably to the PAC recommendations.	18.8	38.8	28.7	10.0	3.7
Government implements the PAC recommendations.	11.2	32.5	38.8	11.2	6.3
Changes in the legislation were adopted as a result of the PAC work.	7.5	28.7	42.5	13.8	7.5
Improvements in the integrity of government information or databases.	8.8	37.5	32.5	8.8	12.7
Legal action was taken against officials who break the law.	15.0	36.3	25.0	12.5	11.2
Disciplinary action was taken against officials who break administrative guidelines.	20.0	22.5	36.2	7.5	13.8

Table 6 reveals that the respondents seemed to agree that the government responds favorably to the PAC recommendations, improvements are enhanced in the integrity of the government information or databases, and legal action was taken against officials who break the law. However, they did not have strong opinions (slightly agree) on the suggestion that the government implements the PAC recommendations (38.8%), changes in the legislation were adopted as a result of the PAC work (42.5%), and disciplinary action was taken against officials who break administrative guidelines (36.2%). Nevertheless, there are small percentages (not

more than 25%) of the respondents who seemed to disagree with all the proposed statements. As a whole, it shows that the public asserted more positive perception towards these issues and it can be said that the existence of the PAC do yield positive impacts on the accountability and administration of government agencies.

Table 7 summarized all the results in this study and compared the findings with the original study by Stapenhurst et al (2005) based on the highest percentage for the 'very important' classification. The results showed that two of the factors are consistent with the conclusion made by Stapenhurst et. al (2005), which are the power to make recommendation and publish conclusions, and having balanced representatives from all major political parties on the committee in which these factors are vital for the success of the PAC.

**Table 7: Comparison of Top 5 Success Factors With the Original Study**

Stapenhurst et. al. (2005)		Present study	
1.	Power to make recommendations and publish conclusions.	1.	Having a clear focus on holding the government accountable for its spending of taxpayer's money and its stewardship over public assets.
2.	Having a balanced representation among parties within the committee.	2.	Power to make recommendation and publish conclusions.
3.	Public involvement and media coverage.	3.	Balanced representatives from all major political parties on the committee.
4.	The Power to investigate or review all past, current, and committed expenditures of government.	4.	Good relations with other parliamentary oversight mechanisms, such as the budget committee.
5.	The power to choose subjects for examination without government direction and advice.	5.	Close working relationship between members from different political parties.

## Conclusion

This study was conducted to identify the success factors of the PAC in Malaysia as perceived by the public. Based on the findings of this research, it was clear that the public perceived having a clear focus on holding the government accountable for its spending and its stewardship over public assets was one of the major key for success. Other factors include the power to make recommendations and publish conclusions, balanced representatives with close working relationship among all political parties in the committee, power to hold in camera meetings, and finally good relations with other parliamentary oversight mechanisms, such as the budget committee.

Although this is the first research conducted from the perspective of the public in Malaysia, the benefits to Malaysian citizens and the PAC cannot be undermined. Notably, the comparisons presented in the last part of the article undoubtedly give a signal and a real picture of the current perception of the public and how the PAC in Malaysia should have performed their job

in order to be recognized as an effective public oversight accounts committee. Additionally, based on the undesirable outcome in terms of the level of awareness and knowledge of the public, it is recommended that the PAC takes greater initiative in creating awareness and educating the public on the importance, role, and functions of the PAC.

This study was subjected to its limitation. The sampling size was relatively small, which included the respondents located within the university surrounding only. Therefore, the results might not be generalized to the larger population of the public. In addition, future studies should include a bigger sampling size, including the public throughout Malaysia and stakeholders, such as the government auditors, government agencies, and international funding agencies. It is interesting to see which factors these groups perceive as the success factors to the PAC.

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# **Social and Environmental Responsibility and Disclosure in a Malaysian Local Authority**

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## **Abstract**

The tremendous economic growth in Malaysia since 1990s saw the rapid urbanization of Klang Valley. However, this impressive growth leads to social and environmental problems such as air pollution and squatters. While social, environmental and sustainability accounting and reporting have experienced a resurgence of interest especially in the private sector, the application of such development in the public sector are relatively new and much less investigated. This paper studies the social and environmental information disclosures by a local authority in the Klang Valley and the nature as well as intensity of the social and environmental activities carried out by the local authority is examined. A content analysis of its annual reports is conducted and social responsibilities information are categorised into four main dimensions adopted from the Bursa Malaysia CSR Framework namely, community, environment, workplace and marketplace. The findings suggested that the community dimension is the most extensively disclosed followed by environmental information whereas that of the workplace is the least disclosed. These findings contrasted to those observed of PLCs in general which established that the workplace dimension scores the highest among the four dimensions. Future research need to be undertaken to investigate this discrepancies.

## **1. Introduction**

During the last decades, social, environmental and sustainability accounting and reporting have experienced a resurgence of interest and application both in the private sector (Line, Hawley and Kurt, 2002) and the public sector (Boyce, 2000; Frost and Seamer, 2002). However, the meaning and application of such development in the public sector are relatively new and much less investigated (Ball, 2004). A UK report shows that the local government and the wider public sector have roles and responsibilities that are more directly linked to the sustainability agenda than those of business (ACCA Research Report, 2002). The report refers sustainability to 'quality of life indicators' that is, some sort of measure of social, economic and environmental well-being of an area. Ball and Grubnic (2007) found that internationally, the

public sector accounts for some forty percent of all economic activity. They also assert that the public sector organizations have far greater responsibilities for sustainable development than the private sector. In essence, accountability lies in the relationships between the organization and the society and/or stakeholder groups of interest (Gray, Bebbington and Collison, 2006). Furthermore, functional pressures for change in environmental services in local government, coupled with changing central government regulations, appear to be important in influencing change (Ball, 2006).

As far as Malaysia is concerned, its tremendous economic growth during the 1990s' saw the rapid urbanization of the Klang Valley leading to social and environmental problems such as air pollution (Zulkifli, 2006) and squatters (Kuala Lumpur Structure Plan 2020). She reported that in the first quarter of 2005, many cases of environmental degradation have hit the headlines of the major local dailies, causing concerns on the part of the public and the government. Reports on illegal logging, hill cutting, river pollution, marine pollution, air pollution, improper treatment and disposal of toxic waste, deterioration of water quality, declining coral reefs, coastal erosion, over-fishing and biodiversity loss are fast becoming a norm. Mismanagement of river resources has led to increasing frequencies and magnitudes of environmental hazards such as floods, raped slope failures, river bank erosion and slumping, accelerated soil erosion, and problems associated with sedimentation (Khairulmaini, 2003). Much discussion and finger pointing ensue from such reports (Zulkifli, 2006) and while the private sectors appear to increasingly address these social and environmental problems, not much is heard from the public sector. As an example for the Malaysian Environmental Social Responsibility Awards (MESRA) ACCA Corporate Social Reporting awards, more companies are making their efforts to produce such reports (The Star, 2008). With regards to the Malaysian public sector, in general the local governments or local authorities are responsible for the public health and sanitation, waste removal and management, town planning, environmental protection and building control, social and economic development and general maintenance functions of urban infrastructure (Laws of Malaysia, Act 171).

The objective of this paper is to explore and examine social and environmental disclosure (SED) of a local authority in the Klang Valley, Malaysia. As the local authority does not produce an SED, its annual reports are examined of any elements of the local authority's responsibility towards social and environmental activities and matters under its jurisdiction. In general, the review of extant literature reveals that most of the studies on the development of social, environmental and sustainability accounting and reporting in Malaysia are mostly limited to studies on corporate social responsibility (CSR) practices of the Malaysian public listed companies (PLCs). This paper is an effort to enrich the literature in particular to the issue of disclosure of social and environmental activities carried out by the local authority in Malaysia. The paper is organized as follows. The following section provides the review of relevant literature on social and environmental reporting or SED followed by a discussion on

the research method adopted in this study. The remaining sections report the findings and conclusion as well as recommendation for future research.

## 2. Literature Review

Since the latter half of the 1990s, accounting and reporting for social, environmental and sustainability have experienced a resurgence of interest and this interest is continuing strongly into the 21<sup>st</sup> century (Ernst and Young, 2002; Gray, 2002; World Economic Forum, 2002; Elkington, 2001; Logsdon and Lewellyn, 2000). A number of these studies have been critical of the reporting practices adopted (Deegan and Gordon, 1996; Deegan and Rankin, 1996; Guthrie and Parker, 1990). Most of the criticisms have been that annual reports disclosures relating to the environmental performance of particular reporting entities tend to be biased with minimal disclosure of negative environmental information. There can be many motivations driving managers to externally report information about an organisation's social and environmental performance and one such motivation might be the desire to legitimise certain aspects of an organisation's operations (Deegan, 2002). Studies of companies in developed countries suggest that corporate image enhancement is the main motivating factor for companies' adoption of corporate social reporting (Adams, 2002; O'Dwyer, 2002, 2003). In relation to this, a majority of the annual reports users believed that the environmental information is important to their decisions and they seek the disclosure of this information in annual reports (Deegan and Rankin, 1997). Annual reports also are considered by various user groups to be a major source of information about an organisation's environmental performance (Epstein and Freedman, 1994; Tilt, 1994).

Lynch (2010) conducted a study on the environmental disclosure practices within the annual reports of Australian state government departments for the period 2000-1 to 2007-8. The study found that although environmental reporting by the government departments has increased, reporting is not consistent over time and there are variations in the standard of reporting between departments responsible. Another study on Australian public sector organizations by Farneti and Guthrie (2009) found that their social and environmental reporting was informed by the latest Global Reporting Initiatives (GRI) and aimed at mostly internal stakeholders. The annual reports were the only one of the media used for disclosure and adoption was driven by a key individual in the organization. In a study on New Zealand local authorities, Barrett and Scott (2008) found that the local authorities investigated, have taken significant steps to engage with community participation in local authority costs and funding decisions. However, lack of accounting knowledge precludes many community members from participating in informed dialogue on relevant issues. In Ireland, a study by Kelly and Moles (2002) in collaboration with the major local authorities in the mid-west region of Ireland found that the concept of sustainable development is still in its infancy. In a study of the largest local governments (LGs) from an Italian region, Marcuccio and Steccolini (2005) found that no local government feels a

strong need to 'legitimise' its activity by conforming to social and environmental issues; instead they adopt social and environmental reporting as fashionable labels to signal conformity with shared norms of rationality and progress, namely the principles of performance improvement and citizen's accountability promoted by the ongoing reform processes.

In the Malaysian context, there has been limited research on corporate social reporting but it is gaining more attention in the recent years. In September 2006, the Bursa Malaysia (formerly known as the Kuala Lumpur Stock Exchange [KLSE]) has launched the CSR Framework (Bursa Malaysia CSR Framework, 2006) requiring PLCs to provide a holistic picture of CSR practices in their company. One of the earliest studies on CSR reporting was done by Teoh and Tong (1994) which examined various aspects of CSR including social reporting. The study found that companies were mainly involved in areas of human resource, product service, community work and the physical environment. Towards the end of the 20<sup>th</sup> century, CSR reporting by the Malaysian companies were still very low (Shireenjit and Zuani, 1998). However, by the early 21<sup>st</sup> century, the situation started to improve (Thompson and Zakaria, 2004). Among the explanations given by the earlier studies for the low disclosure of CSR activities were the absence of legislation on the matter (Nik Ahmad and Sulaiman, 2004) and lack of awareness on the part of the Malaysian business community of their companies' potential environmental impact (Perry and Teng, 1998). In Malaysia, the drivers of CSR reporting are increasingly being investigated (Zain, 1999; ACCA, 2002; Haniffa and Cooke, 2002; Amran and Selvaraj, 2004). Another study by Amran and Selvaraj (2007) shows evidences on the impact of government influence on CSR reporting. It concludes that institutionalisation of the government's aspirations and commitment to CSR reporting is perhaps the most appropriate description for the Malaysian CSR reporting practices.

### 3. Research Method

With regards to the Malaysian context, the subject of responsibility as well as SED of local authorities is relatively new and the literature on this issue is scant, hence in this paper an exploratory approach is conducted. Babbie (2002) explains that an exploratory research approach typically occurs when a researcher examines a new interest or when the subject of study is relatively new. In this regard, as a preliminary step, this paper focuses on analyzing the SED and describes how a large local authority in the Klang Valley region discloses its social and environmental activities in its annual reports. From here an implication is made in terms of the local authority's responsibility towards social and environmental matters under its jurisdiction.

The Klang Valley region in Malaysia is an area comprising Kuala Lumpur and adjoining cities and towns in the state of Selangor and it is the heartland of Malaysia's industry and commerce.

The population in the Klang Valley is estimated to be 7.9 million in 2010 (Helders, 2010). Between 1991 and 2000, the population of Klang Valley grew at 4.8 percent per annum and if the growth rate is sustained, it will reach 8 million in 2016 (The Star, 2006). There are ten local authorities in the Klang Valley which covers a total area of approximately 2,843 square kilometers. The local authority under study is one of the largest in terms of budget allocation and manpower. Its budget allocation for 2009, 2008 and 2007 were RM2.081 billion, RM2.457 billion and RM2.364 billion respectively. In 2009, it has manpower of approximately 10,500 personnel to administer an area of 244 square kilometers under its jurisdiction.

In Malaysia most of the air pollution studies have been focused on the Klang Valley region since it is considered to be the most industrialized area in terms of industrial operations and other anthropogenic activities (Muhamad and Inouye, 1986). In relation to this, Sani's (1979, 1980, 1987 and 1989) environmental reports shows that Klang Valley is the most polluted area in Malaysia. Ability of atmosphere to disperse pollutants in Klang Valley appears to be more restricted than in mid-latitude regions. With mountains in the east and Straits of Malacca on the west, and being highly developed and densely populated, Klang Valley provides a conducive environment for pollutants to accumulate particularly when atmospheric conditions are stable (Chan, 2007). The air pollution comes mainly from land transportation, industrial emissions, and open burning sources (Afroz, Hassan and Ibrahim, 2003). Among them, land transportation contributes the most to air pollution. One other issue which is very often related to social and environmental problem in Klang Valley is that of squatters (Kuala Lumpur Structure Plan 2020).

For the purpose of achieving the objective of this study, a content analysis of the annual reports of the local authority for a period of three years from 2005 to 2007 is conducted. As described above, in these periods especially in 2005 many social and environmental issues were especially reported and discussed. It appears that local authorities may have experienced a certain impact from these issues and disclosed them in their annual reports. Content analysis have been used as a dominant research method by most researchers in the field of social environmental accounting especially in examining companies corporate annual reports (Parker, 2005). The majority of researchers used Ernst and Ernst (1978) social dimension to investigate the extent of social disclosing by enterprises (Clack and Gibson-Sweet, 1999; Hackson and Milne, 1996; Gray, Kouchy and Lavers, 1995). Ideally, all communications by an organization should be considered in capturing its SED. Guthrie and Abeysekera (2006) examine several research method issues relating to the use of content analysis and review the use of such method in understanding social and environmental accounting. Although according to Gray et al. (1995), it is impossible to be certain that all communications can be identified. Various reasons are cited in using annual reports as a focus of investigation in conducting content analysis. Among others, annual reports offers a relevant and useful proxy (Guthrie, Petty, Yongvanich and Ricceri, 2003); annual reports are highly useful sources

of information since managers of companies generally signal what is important through the reporting mechanism (Guthrie et al., 2003); as a communication device, annual reports connect an organization with various external and internal stakeholders (Guthrie and Petty, 2000); annual reports is regularly produced (Niemark, 1995) and in many instances are legislated (Guthrie et al., 2003), thus making comparisons relatively easy (Tilt, 2001); annual reports is also the most widely distributed public documents produced by an organization (Campbell, 2000). More importantly, Guthrie et al. (2003) note that the vast amount of prior research on social and environmental reporting (see for example, Neu, Warsame and Pedwell, 1998; Roberts, 1992; Guthrie and Parker, 1989; Cowen, Ferreri and Parker, 1987) have established that the annual reports of organizations as a major medium for communicating social and environmental information.

In terms of classifying social and environmental information, various researchers have used the seven dimensions to investigate the extent of social reporting by organizations (for example see, Gray, Javad, Power and Sinclair, 2001; Williams and Pei, 1999; Hackston and Milne, 1996; Clarke and Gibson-Sweet, 1999; Belkaoui and Karpik, 1989, Ernst and Ernst, 1978). These seven dimensions comprise issues on environment, energy, fair business practices, human resources, community involvement, products, and other aspects of social responsibility information. In this paper, social and environmental responsibilities information are categorized into four main focal areas/dimensions as suggested in the Bursa Malaysia CSR Framework namely the environment, the community, the workplace and the marketplace (Bursa Malaysia, 2007). The environment dimension covers issues on efficient use of energy and reducing its emission damage to the climate with the aim to protect Malaysia's flora and fauna. Upgrading the welfare of the society in terms of children education, youth development and the under-privileged are the main concern under the community dimension. Providing a quality work environment and health and safety are the main focus under the workplace dimension. Ensuring that the interaction in the marketplace among the main stakeholders (e.g. suppliers, vendors, customers) are done in a responsible manner such as supporting green products and engaging in only ethical procurement practices would be the main concern under the marketplace dimension. Since it has not been found that Malaysian local authorities have produced any SED, this paper adopts the CSR framework in reporting the social and environmental matters while realizing that the framework is basically a set of guidelines for the Malaysian PLCs to help them in the practice of CSR (Bursa Malaysia, 2007).

Words, sentences or portions of pages may be used as a unit of analysis in content analysis (Guthrie et al., 2003). In this paper, sentences are chosen as a unit of analysis as it is likely to provide complete, reliable and meaningful data for further analysis (Milne and Adler, 1999). In analyzing the social responsibilities of this local authority, all sentences describing the

related social activities being carried out in each year are taken into consideration. These social responsibilities information identified from the reading and analysis of annual reports are then coded onto a coding sheet and properly categorized as one of the four dimensions as specified earlier. The analysis is also done to compare the budgeted amounts and the actual expenditure incurred for each category for the three different years: 2005, 2006 and 2007.

#### 4. Results and Discussion

The results of a content analysis of the annual reports of a selected local authority for the three consecutive years (2005 – 2007) are presented in Table 1. As reflected in the table, the quantity of social and environmental information disclosed in the annual reports of this local authority has declined over the years. It was found that the community dimension is the most extensively disclosed as compared to the other three dimensions. The result reveal that more than fifty percent of the disclosures made in the annual reports represent the activities undertaken to better improve the community under its supervision. Activities include involvement in resettling squatters, maintaining buildings for public used and providing recreational facilities, public transports and parking space. This is well expected as six out of its thirteen functions that have been listed (as found in its website) are related to the community dimension. The results suggested that the workplace is the least dimension that is being disclosed for the three years of analysis, i.e. less than ten percent. Environmental dimension (five out of thirteen functions listed are related to this dimension) is the second most extensively been reported in the annual reports for both the year 2005 and 2007 but for the year 2006 it is ranked in the third place after the marketplace dimension. In general, the disclosure made on the environmental dimension approaching twenty percent of the overall disclosure made. Among others, activities under this dimension include cleaning of roads and drains, waste and rubbish collection and disposal, planting trees and maintaining drainages and rivers. The disclosure made on the marketplace ranges between 7.8 percent and 20.8 percent. Activities include maintaining and upgrading of food courts, hawker centres, wet markets and night markets.

**Table 1: Disclosures According to Dimensions**

	2005		2006		2007	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Community	133	65.2	103	56.3	102	59.3
Environment	38	18.6	31	16.9	36	20.9
Marketplace	16	7.8	38	20.8	20	11.6
Workplace	17	8.3	11	6.0	14	8.1
Total	204	100.0	183	100.0	172	100.0

These findings seem to contradict with the one observed in the Malaysia PLCs as reported in the CSR 2007 Status Report (Bursa Malaysia, 2007). The report depicts that the most extensively disclosed information is related to the workplace, followed by information regarding the environment, the marketplace and the community. These contrasted findings is very well expected since the objectives of these two different nature of organisation are very well distinct; the PLCs are profit motivated as opposed to local authorities (or public sector in general) which are more focus on the public welfare. As mentioned earlier in Section 1, local authorities in Malaysia are mainly responsible for the public health and sanitation, waste removal and management, town planning, environmental protection and building control, social and economic development and general maintenance functions of urban infrastructure. For the PLCs issues on employees relation is given more emphasized as a good management of employee relations may result in improved productivity and hence may lead to a better financial performance for the PLCs (Gittell, Nordenflycht and Kochan, 2004; Tsoutsoura, 2004; Delaney and Huselid, 1996; Huselid, 1995; Snell and Youndh, 1995).

An analysis of the budgeted amount and the actual expenditure for each of the dimension for the period under observation is reflected in Table 2. Compared to the amount allocated in 2005, the budgeted amount has increased by 31.5 percent in the year of 2006. However, the allocation for the year of 2007 has only increased by 7.9 percent (i.e. is lower than the amount allocated in the year of 2006). The highest amount of the budgeted figures is allocated for expenses under the community dimension, which covers more than seventy five percent of the budgets for each year. The least amount is allocated to cover expenses under the marketplace dimension, which comprised less than five percent of the budgeted amount. There are no reason disclosed on the fluctuation of the amount budgeted for the three consecutive years. It's suggested that in-depth interviews be conducted with the officers in charged in preparing the annual budget to uncover the possible reasons for the fluctuation of these amounts.

The local authority has allocated a total of RM893 million in the year of 2005 and 61.5 percent out of this amount has been spent during the year. RM 449 million or about eighty two percent of the total expenditure for the year is spent on the community dimension. The amount spent for the environment dimension is RM60 million, which constitute eleven percent of the total expenditure. These scenarios are consistent with the quantity of disclosures made in the annual reports for the year of 2005 (please refer to Table 1), whereby sixty five percent and eighteen percent of disclosures are related to the community and the environment dimensions.

Table 2: Budgeted and Actual Expenditures According to Dimensions

Component	2005				2006				2007									
	Budget	Per-	Actual	Actual	Budget	Per-	Actual	Actual	Budget	Per-	Actual	Actual						
	(RM)	cent	(RM)	(RM)	(RM)	cent	(RM)	(RM)	(RM)	cent	(RM)	(RM)						
Community	682,198,570	76.4	449,527,479	81.8	65.9	1,013,449,270	86.3	563,954,767	86.2	55.6	25.5	802,134,130	82.6	522,933,082	84.3	65.2	16.3	
Environment	76,085,520	8.5	60,835,461	11.1	80.0	50,110,010	4.3	40,292,653	6.2	80.4	33.8	70,442,000	7.3	52,776,549	8.5	74.9	13.2	31.0
Workplace	90,466,800	10.1	24,146,987	4.4	26.7	93,537,810	8	43,378,553	6.6	46.4	79.6	80,463,270	8.3	38,158,660	6.2	47.4	58.0	12.0
Marketplace	44,305,590	5	14,911,516	2.7	33.7	17,120,280	1.4	6,102,300	1	35.6	59.1	17,595,060	1.8	6,386,928	1	36.3	57.2	4.7
Total	893,066,480	100	549,421,443	100	61.5	1,174,217,370	100	653,728,273	100	55.7	19.0	970,634,460	100	620,255,119	100	63.9	12.9	5.1
						281,160,890	31.5	104,306,830	0.19			775,779,800	8.7	708,336,760	7.9			

Comparing the actual expenditure with the budgeted amount, it was found that the highest discrepancy was noted for the workplace dimension in the year of 2005, whereby only 26.7 percent of the amount budgeted is actually spent during the year. However, for 2006 and 2007 the highest discrepancies was noted for the marketplace dimension. Less than forty percent from the amount allocated for the marketplace for these years are actually spent. The least discrepancies between the budgeted and the actual expenses are noted for the environment dimension for all the three years under observation. It was found that nearly eighty percent of the amounts allocated for the environment were actually spent during these years.

As noted earlier, compared to the 2005 budget the allocated amount has increased to 1 billion (i.e. an increase of 31.5 percent) in 2006. A total of RM653 million or 55.7 percent has been spent during the year. 86.3 percent of the total expenditure is used to cover expenses under the community dimension. The amount spent on the community dimension has increased by 25.2 percent compared to the amount spent in 2005. The actual expenses incurred for the environment dimension has decreased to RM40 million as compared to RM60 million spent in 2005, i.e. a decrease of 33.8 percent. It was also noted that the marketplace dimension continues to be given least coverage as only one percent of the total actual expenditure for the year is spent on this dimension. There are no reasons noted in the annual reports as to why the allocated amounts in the annual budget are not fully spent in each year. In the future, interviews with the relevant officers may be conducted to shed some lights on the possible reasons for the under-spending.

The local authority has allocated a budgeted amount of RM802 million in 2007, which represents an increased of eighteen percent as compared to the year 2005 budget and a decreased of twenty one percent if compared to the amount budgeted for 2006. The community dimension continues to dominate the amount of actual expenditure incurred during the year, which represents 84.3 percent of the total expenses spent in 2007. As noted for both 2005 and 2006, expenditure incurred for the marketplace stays to be the least amount spent for the year.

As mentioned earlier, illegal squatters and air pollution are among the major social and environmental problems in the Klang Valley. The community welfare and conservation of the environment are among the two important aspects that have been listed as the main responsibilities of local authorities in Malaysia. Therefore the high percentages of the budgeted and actual amount spent for 2005, 2006 and 2007 on the community and environment dimensions seem to indicate that the local authority is fulfilling its social and environmental responsibility in tackling these issues. Likewise, the local authority should also care for the welfare of its workforce such as providing a more conducive environment in the workplace. The local authority also needs to consider its responsibility to other stakeholders in the

marketplace such as the business community, other government agencies and regulators, and non-governmental organisations.

## 5. Conclusion and Recommendation

The findings suggest that information relating to the community dimension is the most extensively disclosed in the annual reports of the local authority under study for all the three years observed. More than fifty percent of the disclosures made are related to activities that are undertaken by the local authority in ensuring the public welfare. The least items disclosed are related to the workplace dimension, which constitutes only eight percent. The environment dimension rank in the second place in the year 2005 and 2007, but is ranked in the third place in the year of 2006. However, in the case of the Malaysian public listed companies (PLCs) the CSR 2007 Status Report (Bursa Malaysia, 2007) establishes that the workplace dimension scores the highest among the four dimensions.

The analysis on the budgeted amount and the actual expenditure incurred for all the three years under observation shows that there are discrepancies exist between the two stated amounts. The most obvious discrepancies were noted for the workplace and the marketplace dimensions. However, no reasons are reported for the discrepancies in these amounts.

The findings of this study contribute to provide a better understanding on the role of the public sector in maintaining and protecting the environment as well as in upgrading the welfare of the public. These findings are in line with the assertion made by various authors that the public sector organizations have far greater responsibilities for sustainable development than the private sector (see for example, Ball and Grubnic, 2007; Gray et al., 2006 and ACCA, 2002). As sustainability is related to the quality of life indicators or a measure of the social, economic and environmental well-being in an area (ACCA, 2002) therefore, the focus on upgrading of the quality of lives of the squatters in the area under its jurisdiction as well as the efforts and initiatives taken to protect the environment are considered as aiming to improve the social, economic and environmental well-being of the population in the area. Despite the limited research in this area, there is recognition among researchers (Amran and Selvaraj, 2007; Ball, 2006) that government action and leadership are important drivers of the adoption of social, environmental and sustainability accounting and reporting.

Future research need to be undertaken to investigate the possible reasons for the discrepancies between the budgets and the actual spending. It is also useful to find out how the budgeted amounts are allocated to each dimension. It will be helpful to identify whether

this process is done through the public discourses with various stakeholders as what has been done in New Zealand (Barret and Scot, 2008). Thus, conducting in-depth interviews with the relevant officers and personnel is expected to unearth all these issues and may provide more understanding on the responsibility and disclosure process in this particular organization. It is also recommended that a comparative studies been conducted to compare the social and environmental accountability among local authorities in Malaysia to identify the trend.

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Figure 2.5 Evolution of Training's Role

Source: Noe, RA 2005, *Employee Training and Development*, p.41.

Table 6.20 Fit Indices for Hypothesised Structural Model

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Use a separate page for appendices (if required). Provide each appendix with a title.

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Use author-date method. Here are some examples:

*If one author:*

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Transfer of training is generally defined as the degree to which trainees apply the knowledge, skills and attitudes gained in training to their job (Ford & Weissbein 1997; Tannenbaum & Yulk 1992; Wexley & Latham 1991).

*If more than two authors and their work is again cited in the text, use 'et al.'. For example,*

*First citation in text:*

For instance, Tziner, Haccoun and Kadish (1991) noted that the fundamental purpose of training is to help people develop skills and abilities which, when applied at work, will enhance their average job performance in their current job.

*Subsequent citation in text:*

The definition provided by Tziner et al. (1991) links the acquisition of knowledge and skills gained through training to an application in the workplace.

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### Books

Cohen, JW 1988, *Statistical power analysis for the behavioural sciences*, 2<sup>nd</sup> edn, Lawrence Erlbaum Associates, Hillsdale, NJ.

Cormier, SM & Hagman, J 1987, *Transfer of learning: contemporary research and applications*, Academic Press Inc, London.

### Book Chapters

Kozlowski, SW & Salas, E 1997, 'An organisational systems approach for the implementation and transfer of training', in Ford, JK., Kozlowski, SW., Kraiger, K., Salas, E & Teachout, MS (eds), *Improving training effectiveness in work organisation* (pp.247-87), Lawrence Erlbaum, New Jersey

### Encyclopaedia

Tuijnman, AC (ed.) 1996, *International Encyclopaedia of Adult Education and Training*, Pergamon, NY

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Bates, RA 2001, 'Public sector training participation: an empirical investigation', *International Journal of Training and Development*, vol.5, no.2, pp.136-152

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### **Dissertation**

Chen, CH 2003, *Cross cultural construct validation of the learning transfer system inventory in Taiwan*, Unpublished Doctoral Dissertation, Louisiana State University.





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