End-Users Computing Satisfaction (EUCS) Towards the Government Financial and Management Accounting System (GFMAS): Case Study in Malaysian Accountant General's (AG) Department

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https://doi.org/10.58458/ipnj.v01.02.04.0011

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's General (AG) Department in year 2005. GFMAS has been expected to enhance operational efficiency and effectiveness to enable the department to deliver value-added service. As far as the 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). By distributing questionnaires to 140 AG staffs that using GFMAS, descriptive analysis throughout EUCS factors (content, accuracy, ease of use, format, timeliness, system reliability, system speed) have been drawn successfully. Probably, the result will be able to assist The Accountant General's (AG) Department to improve every aspect in The Government Financial and Management Accounting System (GFMAS).

Introduction

The successful use of IT depends on the technology itself and the level of expertise of the end user using the technology (M.Zain et al, 2005). One of the measurements to evaluate this success 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 et al. 1995; Doll and Torkzadeh 1988, 1991; Henry and Stone, 1994; Torkzadeh and Doll 1991).

However, it seems clear that previous research have not attempted to discover 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 GFMAS (Government Financial Management Accounting System) at AG Departments in Malaysia.

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 to fulfill 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 service 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 may provide 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).

End User Computing Satisfaction (EUCS)

According to Doll and Torkzadeh (1988), 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 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, and eventually they can interpret the report as in needed by the organisation. These end users 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 and Torkzadeh Model (1988); 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). The model will become the fundamental guideline to examine factors contributing to EUCS generally in government sector and specifically at AG Department.

The Benefits of GFMAS to Users

Apparently, GFMAS has provided several benefits to the internal as well as external end user computing. Top Management will enable to make 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. 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, it will provide 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 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, RC and other beneficiaries are those who get a benefit from GFMAS system. Other than enhancing transparency in accounting operations, GFMAS has also ensure faster payments and provide a better channel of access to their transactions status. The Controlling Officers will enable to understand 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).

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, the study aims to contribute to the existing body of knowledge in the area of accounting information system for public sector.

Purpose of the Study

Researchers has come out with this preliminary purpose in order to find the satisfaction level. The purpose of this study is:

i) To explore the level of satisfaction among end users of GFMAS in Accountant General Department.

Theoretical Framework of EUCS towards GFMAS

The items, which represent EUCS, are content, accuracy, format, ease of use, timeliness, system speed and system reliability. Doll and Torkzadeh (1988) previously used this method in their initial study of EUCS. The demographic factors consist of gender, education background, position, year of service (tenure), and attending computerised accounting course.

Respondents

The research respondents for this study consist of two groups namely executive and non-executive of Accountant General Department staffs in Federal Territory of Labuan, Kota Kinabalu, Keningau, Tawau and Sandakan. The sampling technique for this study has applied convenient sampling because the staff for 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.

Findings and Discussions

Content

The use of information system reports is one of the most frequently reported measures of the success of an information system (Delone & McLean, 1992). The end user perceived that the content of information is important especially for the purpose of decision-making process. This argument is proved by the research done by Blaylock and Rees (1984) that employed MBA students in evaluating the perceived usefulness of specific report contents. Meanwhile, Jones and McLeod (1986) used several information sources in order to test the perceived importance of each information item among senior executives. Mahmood and Medewitz (1985) reported that 48 graduate students satisfied with the usefulness of the report.

In the study by Rivard and Huff (1988), they evaluated the usefulness of the content produced by information system, which is user developed, among 272 end-users. Edmundson and Ross (1994) suggested measuring system characteristics such as content of the database, aggregation of details, human factors, response time and system accuracy. In Doll and Torkzadeh study, they labelled content of information as the most important dimension in evaluating EUCS.

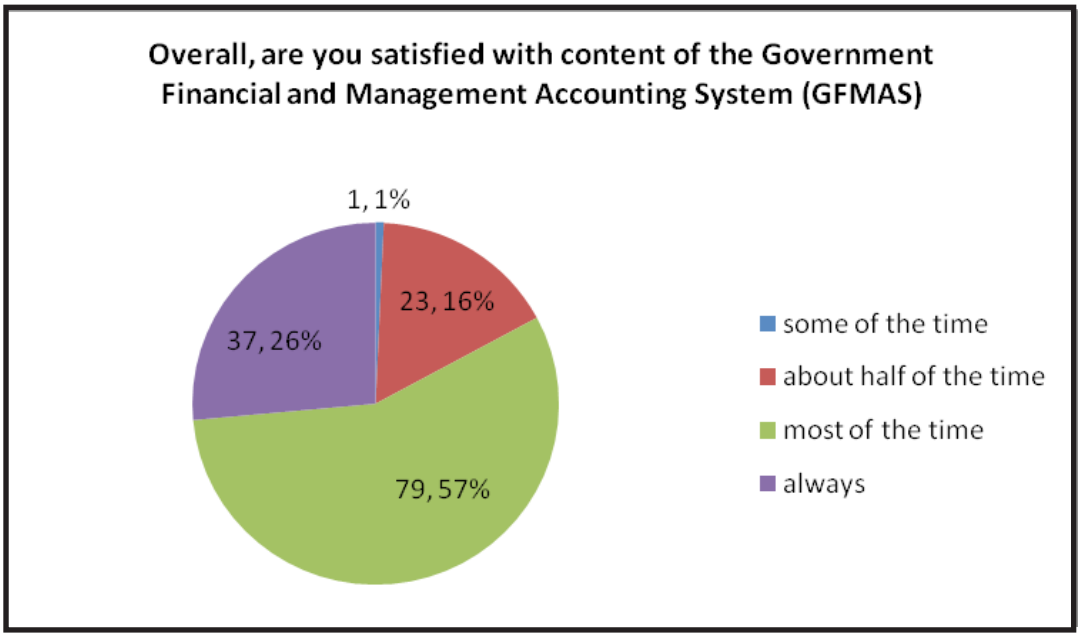

Figure 1: The satisfaction with content of
the Government Financial and Management Accounting System (GFMAS)

From the survey that has been done, most of the time about 57% satisfied with the content of the GFMAS. This is because the system seems to provide the information that sufficient, fit and adequate for their need. The content information that has been provided by the system is considered understandable by most of the users.

Accuracy

Accuracy of information produced by the system is important to measure the overall EUCS. Consequently, it might lead the good perception of the end user to overall satisfaction. Bailey and Pearson (1983) proposed 39 system-related items for measuring user satisfaction. Among their ten most important items, in descending order of importance, were information accuracy, output, timeliness, reliability, completeness, relevance, precision, and currency. In the early study, Ahituv (1980) incorporated five information characteristics into a multi-attribute utility measure of information value namely accuracy, timeliness, relevance, aggregation and formatting. Also, Olson and Lucas (1982) proposed report accuracy and appearance as measures of information quality in office automation systems. Subsequently, it seems to suggest that accuracy is one of the factors that represent the satisfaction. The respondent who is satisfied with the accuracy of information is also satisfied with overall system.

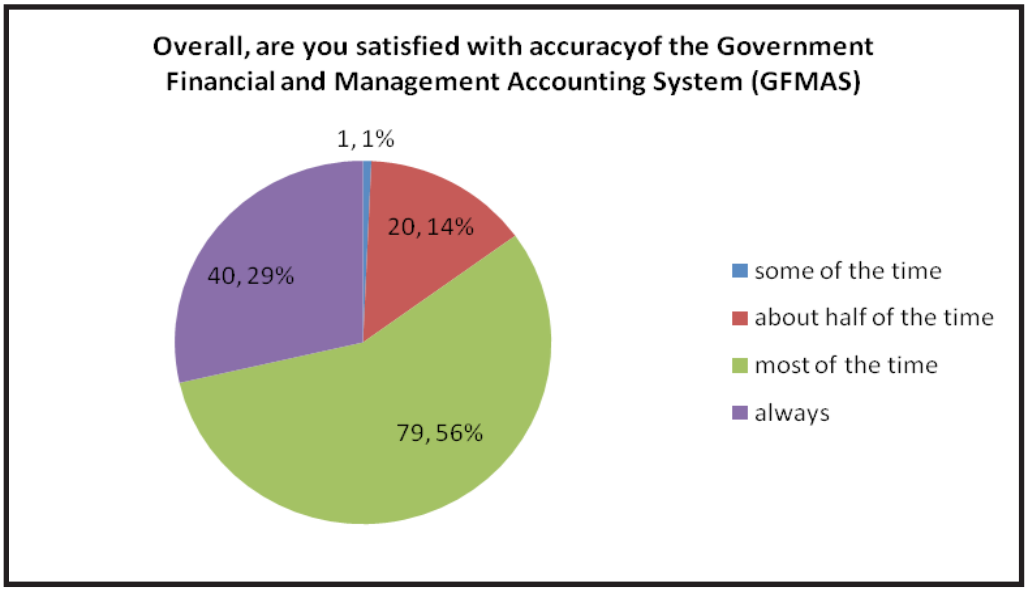

Figure 2: The satisfaction with accuracy of
the Government Financial and Management Accounting System (GFMAS)

From this result, it shown that 79 from 140 staffs are perceives to be satisfied with the accuracy of the GFMAS. Although the system is still new, the system manages to provide the accurate, correct and error free information to their users. Perhaps, the system can be dependable by the users in order to make decision.

Format

Bailey and Pearson (1983) classified format of information reported as the one of the description measures in their study. Doll and Torkzadeh (1988) used format in their study as the second dimensions in determining EUCS. Mihir and Bijan (2002) identified six relevant dimensions (relevance, confidence, usefulness, ease of use, format and playfulness) of user satisfaction under a research framework for user satisfaction with decision support and usability of a DSS. In Malaysia, format of the report should be in accordance with the standard stated in the Statutory Bodies Act 1980 (Account and Annual Report) (240 Act). End user is expected to satisfy with the format of accounting report produced by CAS.

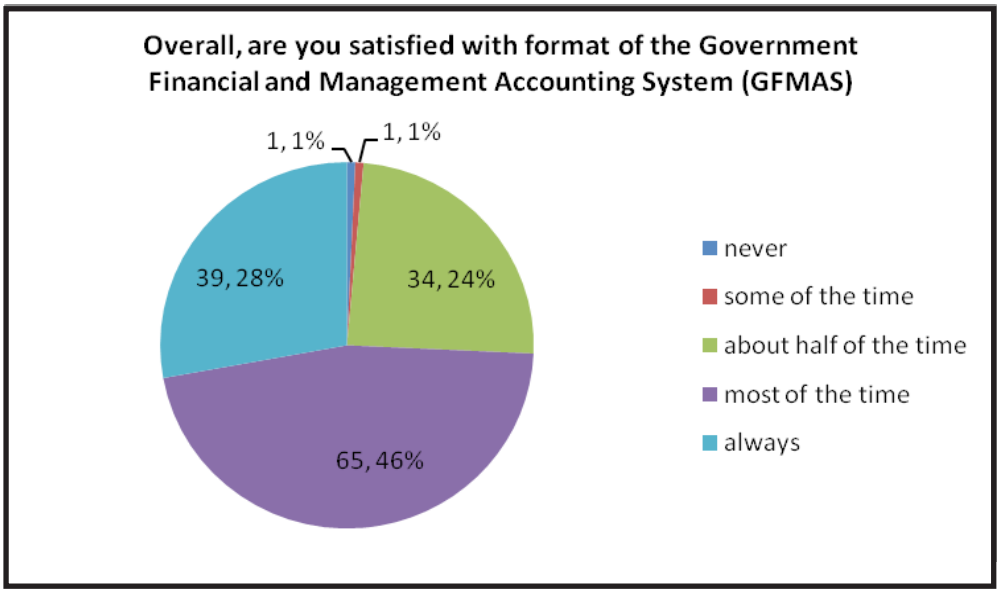

Figure 3: The satisfaction with format of
the Government Financial and Management Accounting System (GFMAS)

From the figure, more than 50% feel satisfied for the most of the time because the output and layout of information that has been provided by the system is presented in useful format. Furthermore, the format is prepared according to the financial standard such as the journal, ledger, financial statement, invoice, voucher and receipt.

Ease of Use

Ease of use has become increasingly important in software design (Branscomb and Thomas, 1984). There is increasing evidence that the effective functioning of an application depends on its ease of use or usability (Goodwin, 1987). If end users find an application easy to use, they may become more advanced users, and therefore, better able to take an advantage of the range of capabilities the software has to offer. Also, ease of use may improve productivity or enable decision makers to examine more alternatives (Doll and Torkzadeh, 1988).

If the system is not easy to learn, it will not be used. Management will be reluctant to invest a large amount of time in the training of the clerical and sending them to the computerised accounting course. In addition, managers will invest even less time in any attempts to learn to use the system themselves. Ease of use is expected to increase the level of overall EUCS. It shows that ease of use is one of the factors that represent the overall EUCS. The respondent who is satisfied with ease of use of the system is expected to satisfy with overall system.

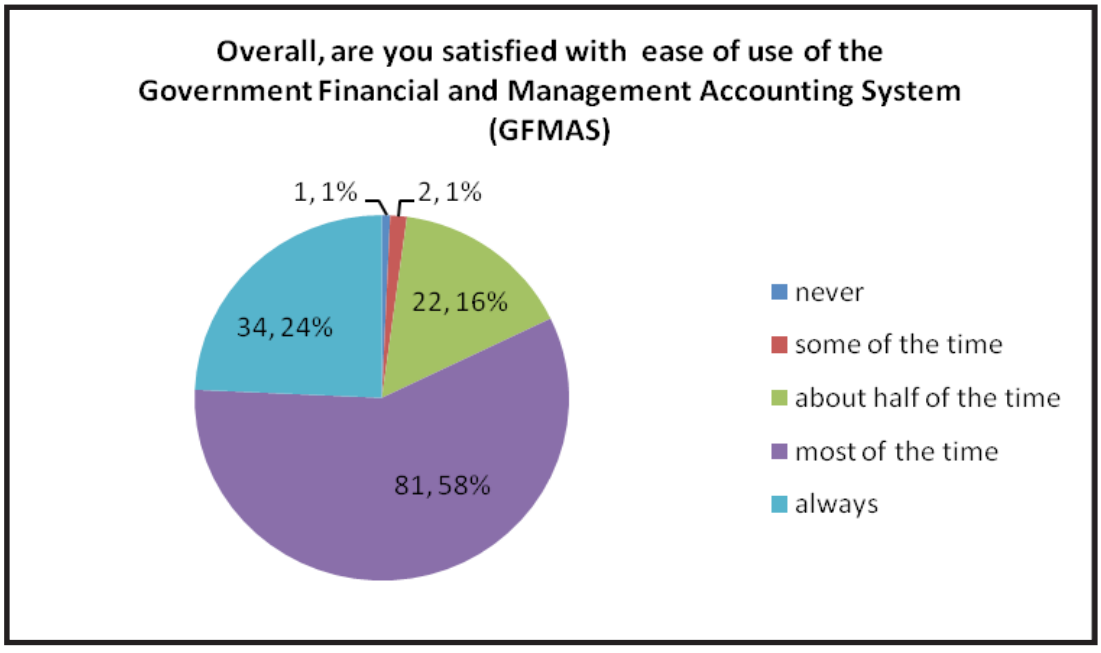

Figure 4: The satisfaction with ease of use of
the Government Financial and Management Accounting System (GFMAS)

For ease of use, most of the time about 58% of end-users feels that they satisfied with the GFMAS. Furthermore, less of 30% feels unsatisfied with the system. This is due to the user -friendly system, easy to use, interaction and operates among users. Besides that, users have been provided a user manual and help tools to solve a problem in operating the system.

Timeliness

According to Chang et al. (2003), timeliness is referring to the speed and frequency of information provided by accounting information system (AIS). Consistent with Chenhall and Morris (1986) and Choe (1996), they measured timeliness with two items, namely speed and frequency, using a seven-point Likert type scale. Bailey and Pearson (1983) ranked timeliness as the forth dimensions in determining the information quality among 8 organisations. King and Eipstein (1983) evaluated 76 managers and included timeliness as one of the dimensions in the field of information. Miller and Doyle (1987) and Bell (1985) conducted studies and employed report timeliness as their descriptions of measures. In general, if the end-users satisfy with the timeliness of the report produced by the CAS, they may be satisfied with the overall of the system. Hence, timeliness is assumed to increase the level of overall EUCS. This study suggests that timeliness is one of the factors that represent the overall EUCS towards GFMAS.

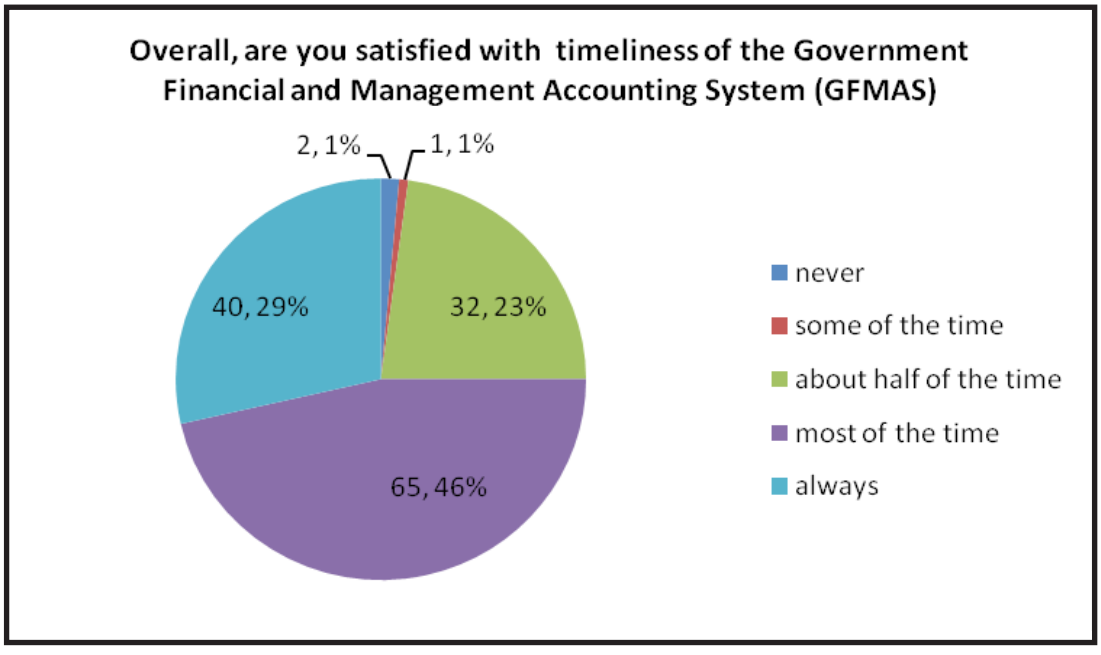

Figure 5: The satisfaction with timeliness of
the Government Financial and Management Accounting System (GFMAS)

In measuring the timeliness towards the GFMAS, the study has found that most of the users satisfied with this factor due to the reason that this system has provide up-to-date, useful and in time information to be used in decision making.

System Speed

Chin and Lee (2000) extended the existing research by providing a new conceptual perspective on how EUCS is formed and how does it going to be measured. In addition, they operationalised this new perspective by providing a new measurement instrument for empirical testing. Beyond the EUCS context, they suggested that their model and approach were too general to be used in creating new measures in other IS satisfaction areas where concerns have been raised (i.e. service quality, Van Dyke et al. 1997). As for comparison, they used Doll and Torkzadeh's (1991) EUCS set of measures given that it is probably known as one of the best and frequently employed sets in the literature. They also developed additional measures for Doll and Torkzadeh's five constructs.

Thus, they constructed another dimension as one of the factors contributing to EUCS. They proposed that overall operating speed might also represent another factor. The argument is that, within the human computer interaction literature, the speed with which a computer system responds has been argued to be an important factor influencing the usability and emotional responses among users. This in turn makes satisfaction with the operating speed of a system should have a strong impact on the overall satisfaction with system used above and beyond the other functional attributes being considered (i.e., content, accuracy, format, ease of use, and timeliness).

They defined that satisfaction with operational speed as the extent to which an individual is satisfied with the operational speed of the system. Therefore, another dimension that has been added in this model is satisfaction with system speed.

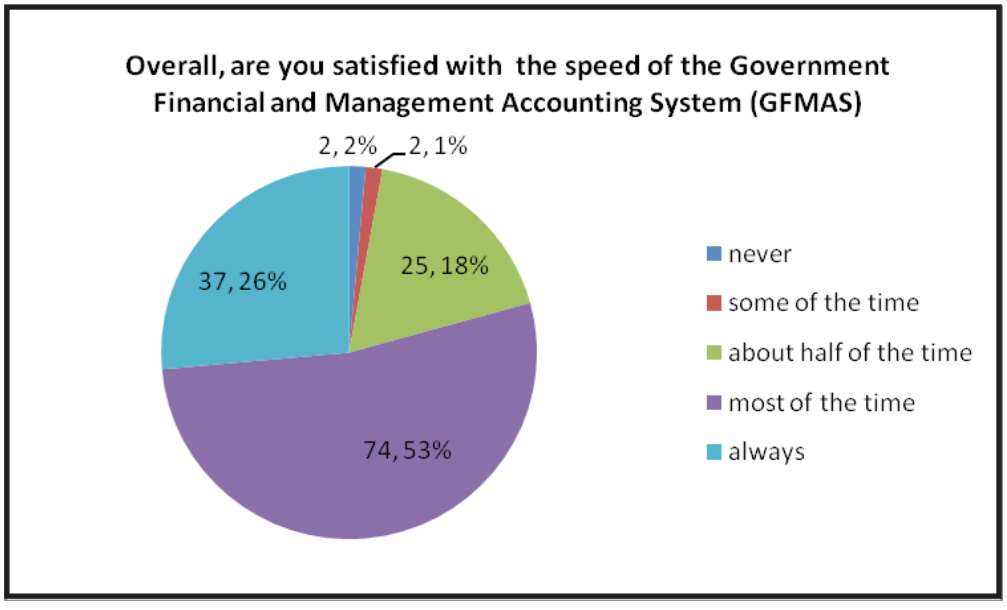

Figure 6: The satisfaction with speed of
the Government Financial and Management Accounting System (GFMAS)

From the result, the study has found that users are satisfied with the system speed because the system is able to operate quickly with the huge number of report to be process in one time. Furthermore, the system seems to be capable to produce a useful information and report in sufficient time.

System Reliability

Providing a reliable and effective information protection requires an approach which needs some considerations from variety of areas, either within or outside the information technology area (Capron and Perron, 1993). An information protection program is more than establishing controls for the computer held-data; but it should also address all forms of information.

It should be noted that the information, data, programs and applications, transactions, and systems are extremely valuable. Therefore, the amount of protection of these items should be exactly the same as protection of computer hardware. The following items are generally accepted standards for a security program:

(1) Protect classified data

(2) Protect against unauthorised access, modification, disclosure or destruction of data.

(3) Ensure the ability of the organisation to survive the loss of computing capacity (disaster recovery planning).

(4) Prevent employees from probing the security controls as they perform their assigned tasks.

(5) Ensure management support for the development and implementation of security policies and procedures.

Swanson (1974) used several dimensions to measure MIS appreciation among managers. These include the reliability of a computer system, on-line response time, the ease of terminal use and so forth. Hamilton and Chervany (1981) proposed data currency, response time, turnaround time, data accuracy, reliability, completeness, system flexibility, and ease of use among others. King and Epstein (1983) proposed multiple information attributes to yield a composite measure of information value. Reliability is one of the proposed information included in his study.

Generally, this study focuses on components in reliability dimension, either in internal or external point of view. The latter dimension deals with downtime and disruption of CAS. While the former studies on security system, password installation and back-up system of internal reliability dimension.

Gosney (1995) stated that back up or saving of data and software held in the system disk is an important precaution steps that should be in concerned by the end user. The failing to do so will lead to the possibility of time-consuming reconstruction of lost information. Worse than that irretrievable lost of data and software might happen.

The computer system would not be able for processing should there be unavailability of essential software and data. Eventually, the system can be retrieved should there are back ups. Thus, this study expects that when the end user satisfies with the system reliability, it will lead them to be satisfied with the overall EUCS to the system.

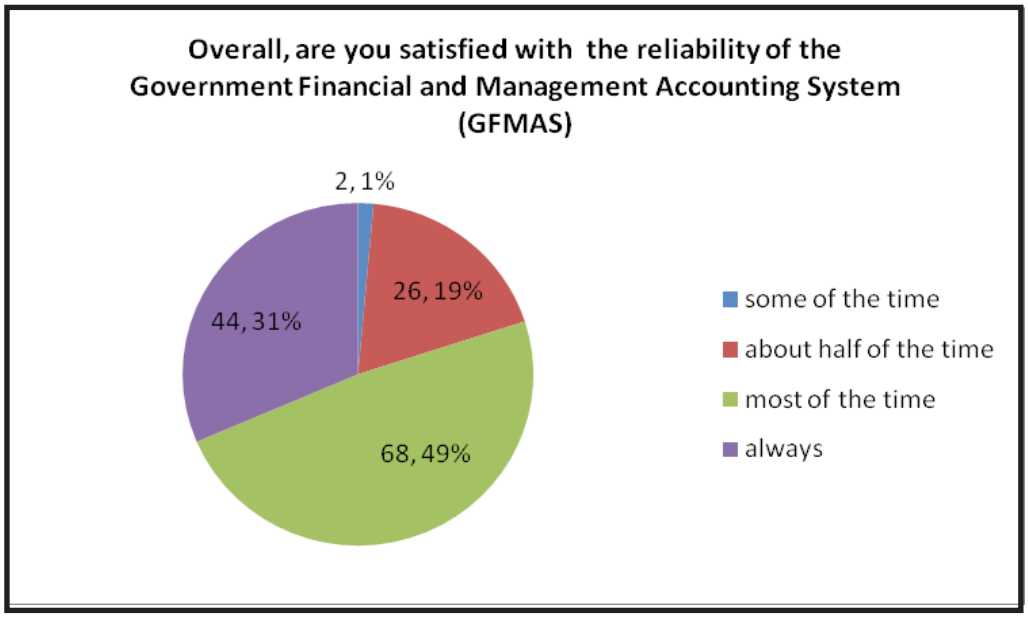

Figure 7: The satisfaction with reliability of
the Government Financial and Management Accounting System (GFMAS)

The last factor that has been measured is system reliability, where most of them are satisfied towards the system. The reason seems because of rarely experience with inconvenient and system interrupted during system operation. The GFMAS also has provided with effective and efficient system security, password and recovery system. As a result, most of end-users will rely and feels reliable with the system usage.

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). The proposed 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 with GFMAS. The study also suggests that content, accuracy, format, ease of use, timeliness, system speed and system reliability must be emphasized to the efficiency and effectiveness of GFMAS. Thus, software developers must address rich system features and powerful system speed and functionality as important design objectives when developing systems in ensuring better output.

Even though the finding of this study is preliminary in nature, it could be generalized to the other AG departments especially in Peninsular Malaysia. This is due to the different geographical location whereby AG departments in peninsular Malaysia are nearby with the AG headquarter thus those departments and their staffs are expected to received more information and expertise pertaining to GFMAS.

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