

STRATEGIC MANAGEMENT ACCOUNTING AND INFORMATION TECHNOLOGY COMPETENCY ON CUSTOMER SERVICE PROCESS PERFORMANCE IN LOCAL GOVERNMENT AGENCIES

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ABSTRACTS

The main objective of this study is to examine the effects of the adoption of Strategic Management Accounting (SMA) techniques and Information Technology (IT) competency on customer service process performance of Malaysian Local Government Agencies (LGA). Questionnaires were mailed to top managers of all 146 LGAs. The findings revealed that SMA information use and IT competency contribute directly in improving reliability of service delivery, level of staff responsiveness in attending to customers' issues and requests, staff competency in carrying out tasks, and staff skills in providing service at a faster rate with less error. The results therefore suggest that IT competency adds value to LGAs that use SMA information via its ability to store, retrieve and process information with speed and accuracy. IT competency enables LGAs to provide online transactions, thereby facilitating revenue collection and reducing uncollected revenue while the use of SMA techniques can help LGAs to eliminate non-value added activities.

Keywords: *Strategic Management Accounting, Customer Service Process Performance, Information Technology Capability and Local Government Agencies.*

JEL Classification: M15, M41, M48, O33, O38

Introduction

With the emergence of a global economy, advances in technology, increased societal demands, the need to provide more social services with fewer resources, and managing public sector organizations are becoming more challenging than before (Kaul, 1997). Subsequently, many public sector organizations worldwide are now devoting time, money and attention to satisfy multiple stakeholders' expectations through the application of private sector management techniques better known as New Public Management, a movement that focuses on efficiency and effectiveness. Management accounting is becoming more relevant in public sector organizations and the relevant use of management accounting techniques is critical in issues pertaining to customer service processes. Given this new challenge, issues are raised about the relevance of sustaining Traditional Management Accounting (TMA) in enhancing public sector performance (Smith, 2000; Lamberti and Noci, 2006; Agasisti, Arnaboldi and Azzone, 2008).

One of the criticisms of the TMA practice is that internal orientation of accounting information is too narrow for strategic decision making (Bromwich, 1990; Kaplan and Norton, 1992; Cadez and Guilding, 2008). Most if not all, information produced by the TMA is highly quantitative and internally focused. While this information is deemed important and sufficient for planning, decision making and control in the past, the current landscape has changed and this calls for a demand for broad scope information. The failure to produce broad scope information would lead managers to limit their focus on the operational issues, downplay focus on broader issues relating to policies, strategies and directions of an organization (Bromwich and Bhimani, 1989). As such, it is appropriate that the application of today's management accounting practices appropriately reflect the new demand for planning and controlling information (Kaplan and Norton, 1992; Cadez and Guilding, 2008). The employment of Strategic Management Accounting (SMA) as one of the ranges of new management accounting techniques and approaches could augur well to meet the new challenges facing public sector managers.

Recent SMA literature has conceptually agreed that the implementation of the SMA technique in the public sector is necessary to monitor external performance as well as internal efficiency and effectiveness of public sector

organizations (Smith 2000; Lamberti and Noci, 2006). This is in line with the argument that accounting plays a significant role in promoting performance of public sector organizations (Hoque and Moll, 2001). Michael (1991) suggests that the public sector should apply new management techniques that are able to provide the management with more strategic information to sustain a long term quality improvement effort. Yet, there is a lack of empirical evidence on the level of SMA usage among the public sector organizations, although many studies have been conducted on the prevalent use of SMA in the private sector. Hence, the first objective of this study is to investigate whether the adoption of the SMA techniques enhances customer service process performance of Malaysian LGAs.

LGAs in Malaysia are generally under the state governments and headed by civil servants with the title of *Yang Di-Pertua* (President). LGAs have the power to collect taxes, to create laws and rules and to grant licences and permits for any trade in their areas. They are also responsible for public health and sanitation and management, environmental protection and building control, social and economic development and general maintenance functions of urban infrastructure within its jurisdiction. Basically, LGAs are responsible in providing the basic services aimed at up-keeping the local community including businesses. Ancarani (2005) suggests that public sector agencies including LGAs should be more transparent, effective and efficient in providing services to the public. Public sector agencies, with its key role in providing services to the public, have to realise that the key factor is to transform their system to a more customer-centric services (Stamoulis, Gouscos, Georgiadis and Martakos, 2001).

The demand for effective and efficient solutions to problems stresses on a customer-centric system, making the use of IT an absolute essential (Torres, Pina and Acerete, 2005). In Malaysia, the government acknowledges the importance of IT competency in the LGAs. E-PBT¹ was established to enhance the convenience, accessibility and quality of interaction of the local authorities with the public and business at large with the objective of improving the flow of information and processes within the government and subsequently, improving the speed and quality of service delivery.

¹The concept of E-PBT is to have online application system based on all local authorities website to carry out their daily transaction. Among the services are e-assessment, e-compound, e-rental, e-licensing, e-complaints, e-submissions, e-business and e-community. Local Government Director General in a press statement stated that 11 local authorities established more than 5 application systems. The system is to provide easier channel for the public to interact with the council (The Star, 8 July 2003).

IT competency has been widely perceived as an integral part of organizational success and failure and public sector organizations are eager to use IT to support their operational and strategic objectives. Within the IT literature, it has been widely argued that IT competency enhances service reliability, reduces transaction errors and increases consistency in performance (Bharati, 1998). Bharati further elaborates that IT strengthens online connections with customers, disseminates service information, facilitates transactions, improves customers service and manages inventory via electronic links with suppliers. According to Quinn, Baily, Herbert, and Willett (1994), IT competency enables firms to create better customized or individualized services, and knowledge links for identifying and sharing organizational expertise. Several researchers have suggested that the use of IT could enhance customer service process performance through the elimination of inefficiency, reduce long term cost, improve service reliability and reduce transaction errors (Bharati, 1998; Berlinger and Te'eni, 1999; Burt and Taylor, 2000). However, there is limited investigation examining the link between IT competency and customer service process performance within the public sector setting. Hence, this study aims to provide empirical support on the relationship between IT competency and customer service process performance of Malaysian LGAs.

The effect of IT competency alone and the use of SMA on its own will not have as much impact in improving the organizational performance as when they are simultaneously together. The storing, retrieving and processing of information is likely to be fostered with the presence of IT competencies. This is in line with the argument put forward by the Resource Complementary Theory (RCT) by Clemons and Row (1991). The RCT suggests that the interaction of IT competency and other organizational factors could lead to the creation of unique resources that are able to increase accuracy of work process, reduce processing time and enhance the quality of output. Therefore, this study also examines the interactive effect between IT competency and the use of SMA information on customer service process performance among LGAs in Malaysia.

The remainder of this paper is structured as follows. The next section provides a review of the relevant literature and this is followed by the hypotheses underpinning this study. Section 4 outlines the research design. The results of the data analyses and discussion are presented in section 5. A conclusion is provided in the last section

Literature Review

Strategic Management Accounting (SMA)

Simmonds (1981) defined SMA as the provision and analysis of management accounting data about a business and its competitors for the use in developing and monitoring business strategy. This concept of SMA was introduced at the time when the role of management accountant exhibited a highly internal focused orientation (Guilding, Cravens and Tayles, 2000). Bromwich (1990) referred to SMA as a technique that evaluated the enterprise's competitive advantage indicating that the time has come for management accountants to acquire new skills beyond their usual areas and the need for management accountants to blend their knowledge of accounting with other disciplines, viz. general management, corporate strategy, marketing, and product development. Adopting definitions given by Simmonds (1981), Bromwich (1990) as well as Shank and Govindarajan (1993) and Lord (1996) operationalized SMA into three elements: collection of competitor's information, exploitation of cost reduction opportunities and the matching of accounting with emphasis on strategic position. A different perspective was introduced by Roslender (1995) when he integrated marketing as an important component into management accounting. Guilding, Cravens and Tayles, (2000) identified three orientations in SMA: competitor focus, marketing focus and future focus that are reflected in twelve SMA techniques. The SMA techniques include attribute costing, brand value budgeting and monitoring, competitor cost assessment, competitive position monitoring, competitor appraisal based on published financial statement, life cycle costing, quality costing, strategic costing, strategic pricing, target costing, and value chain costing. Subsequently, many SMA studies have adopted this definition with some modifications (such as Cadez and Guilding, 2008; Cinquini and Tenucci, 2007; Noordin, Zainuddin and Tayles, 2009 and Sari, 2006).

In the early 1990's, some empirical based research on SMA started to appear in the management accounting literature, contributing further to the development of the SMA concepts (Carr and Tomkins, 1996; Collier and Gregory, 1995; Dixon, 1998; Guilding, Cravens and Tayles, 2000; Lord, 1996; Rickwood, Coates and Stacey, 1990). The commonly held objective of these early empirical works was to explore the usage of SMA within an

organization using the case study approach. The general finding was almost consistent; some SMA techniques are highly used by some companies while certain other types of the SMA technique have not been widely adopted.

More recent studies examining the level of SMA adoption rate tend to employ a large- scale study using the questionnaire survey (Cadez and Guilding, 2008; Guilding et al., 2000; Sari, 2006; Szendi and Shum, 1999). Guilding et al. (2000) were among the first SMA researchers to use the questionnaire approach for data collection. Their study compared the SMA practices among large companies in New Zealand, the United Kingdom and the United States. The findings showed that the technique related to competitor focus accounting demonstrated high usage (above average) in all the three countries. Szendi and Shum (1999) discovered that advanced management accounting technique had been applied by manufacturing firms in Latin America. Recently, Noordin, Zainuddin and Tayles (2009) explored the extent of SMA information use among the Electrical and Electronic (E&E) companies in Malaysian. Their findings revealed that the E&E companies have been using SMA information in their strategic decision making. In spite of the continuous research done on SMA, the above mentioned research findings are often not easily comparable due to the different definitions, scope and focus used in the studies. The use of case study methods, in the earlier group of studies, limits the generalizability of the findings. To date limited attempts were made to test the relationship between the SMA information use and its effects on customer service process performance among public sector agencies.

Information Technology Competency

A review of literature revealed very little consensus on the definition of IT competency and its measurement. Bharadwaj (2000) and Hackler and Saxton (2007) defined IT competency as the firm's ability to mobilize and deploy IT based resources. This included the ability to easily and readily diffuse or support a wide variety of hardware, software, compunctions technologies, data core applications, skills and competencies, commitments and values within the technical physical base and the human component of the existing IT infrastructure. This definition was consistent with the definition provided by Zhang (2005) who referred to IT competency as a firm's ability to acquire, deploy and leverage IT investment in combination

with other resources and capabilities to support, and enhance its distinctive competencies and skills to achieve business objectives.

Empirical studies examining the relationship between IT and performance demonstrated a positive relationship between IT competency and organizational performance (such as Bharadwaj, 2000; Broadbent, Weill and Neo, 1999; Mahmood and Soon, 1991; Mahmood and Mann, 1993; Ravinchandran and Lertwongsatien, 2005; Ray, Muhanna and Barney, 2005; Santhanam and Hartono, 2003; Tippins and Sohi, 2003; Wade and Hulland, 2004). However, very few empirical studies examined the relationship between IT competency on customer service process performance. For example Lederer, Mirchandani and Sims (2001) examined the role of IT competency in enhancing information access, business efficiency and customer relation of the electronic retailers. Their results indicated that IT competencies were an important element in improving these three measures of performance. Ray, Muhanna, and Barney (2005) discovered that IT competency was an important tool in developing and shaping customer service process in order to achieve the above average service quality performance. However, these two studies focused on the impact of IT competencies on customer service process performance in large private firms.

Thus far, very few empirical studies have examined the effects of IT competencies on performance among public sector organizations. Yet, IT competencies were identified as one of the critical tools for public sector organizations to innovatively and simultaneously address the challenges they were facing² (Berlinger and Te'eni, 1999; Burt and Taylor, 2000). They have argued that IT competency within the public sector setting could help to maintain reliable, high quality and up-to-date information.

Additionally, IT competency could help public sector organizations in improving their internal processes as well as their interaction with their constituencies (Chircu and Lee (2003). IT competency is expected to benefit the public sector organizations in terms of cost savings, improved communication and coordination, expanded citizen participation and increased public sector accountability (Kamal, 2006). Conceptually, citizens

² Among the challenges is the urgent need to provide prompt responses to the demands by the citizens (Kamal, 2006).

and policy makers agreed that IT competency could help public sector organizations to improve services and operate more effectively (Sanchez, Koh, Kappelman and Prybutok, 2003). The advances of IT could facilitate the public sector to improve their productivity and effectiveness by rethinking missions as well as the re-engineering process. The internet, intranet, data warehouses and customer relations have been used in government agencies in developed countries to change the conventional way that organizations communicate internally and to interact with their citizens and with other organizations (Kamal, 2006). However, the argument in favour of the use of the IT competency in the public sector lacks empirical support.

Interaction of SMA Techniques and IT Competency

The RCT by Clemons and Row (1991) suggested that the interaction of IT competency and other organizational factors could lead to the creation of unique capabilities that are difficult to imitate. This in turn enhances the organizational ability to perform above the industry average performance. A group of IT studies examined the interaction effects of IT with other organizational factors on organizational performance (such as Bhatt and Grover, 2005; Jeffers, Muhanna and Nault, 2008; Powell and Dent-Micallef, 1997; Ravinchandran and Lertwongsatien, 2005; Ray, Muhanna and Barney, 2005; Zhu, 2004; Zhu and Nakata, 2007) and found that their organizational performance surpassed those without the interaction effects. For example, Powell and Dent-Micallef (1997) investigated the linkages between IT as technology resources and firm performance in the retail industry based on the complementary relationship between IT and six human resources and six business resources. Their findings suggested that IT provided an advantage through complementary human and business resources.

Ravinchandran and Lertwongsatien (2005) extended these studies and examined the interaction effects of IT resources, IT competency, IT support for core competencies and firm performance. Their findings revealed that the synergy between IT competency and other non-IT elements were able to contribute to a better organizational performance. A more recent study by Jeffers, Muhanna and Nault (2008) in examining the interaction effects of IT competency with two non-IT resources of open communication and business practices, discovered that the possession of strong IT knowledge and systematic work practice could enhance the organization's ability

to deliver a better customer service process. Similarly, the extensive use of IT application in warehouse and transportation, customer interaction, networking and data tracking combined with good human resource communication could contribute to a positive customer service process.

Zhu (2004) examined the combined effect of IT infrastructure and e-commerce capabilities on 114 companies in the retail industry. The results showed a strong positive interaction effect between IT infrastructure and e-commerce capabilities, suggesting that the complementary synergy between front-end e-commerce capabilities and back-end IT infrastructure contributed to the firm's performance in terms of sales per employee, inventory turnover and cost reduction. Combined together, they became more effective in producing business value. Ray, Muhanna and Barney (2005) examined the extent of technical IT skills, generic technologies, IT spending, flexible IT infrastructure and shared knowledge on the customer service process performance and concluded that it was valuable, rare and costly to imitate IT competency such as the interaction between shared knowledge and generic technologies to enhance customer service performance. Technical IT skills, generic technologies and IT spending on their own did not explain the significant variance to customer service performance.

Studies examining the interaction effects of IT competency with other organizational factors revealed almost consistent findings. Other organizational factors that have been examined in IT literature included top management commitment (Morris, 2006; Powell and Dent-Micallef, 1997), knowledge management (Kearns and Lederer, 2003), innovation (Huang and Liu, 2005) and culture (Morris, 2006). However, there were hardly any studies on the combined effects of IT competency and the information provided by the strategic management accounting systems.

Hypotheses Development

SMA and Customer Service Process Performance

Within the management accounting literature, researchers conceptually agreed that the use of strategic information derived through the adoption of

SMA techniques were important for managers to make effective decisions (Cadez and Guilding, 2008; Chenhall, 2003). They opined that the ability of managers to obtain and use information about market, customer, competitors and supplier equipped an organization with tools to adapt to the changes in the environment, resulting in a better organizational performance. Choe (2002) argued that for an organization to be successful it must manage and utilize information effectively.

Extensive studies had been conducted to examine the relationship between the use of information and its effects on organizational performance. Chenhall (2003) argued that organizations with better information were able to facilitate managers to make more effective decisions which in turn led to better organizational performance. A positive association between the use of accounting information and performance has been confirmed in many prior empirical studies. For example, Abernethy and Guthrie (1994) provided evidence that the use of broad scope information was associated with better performance. Meanwhile, Mia and Chenhall (1994) found that a higher usage of broad scope of management accounting information was associated with higher performance for marketing activities. Mia and Clarke (1999) found that the use of benchmarking and monitoring information provided by SMA positively affected performance. Ghani and Said (2010) discovered that greater Balanced Score Card (BSC) usage among Malaysian local authorities were associated with better service quality performance. Guilding, Cravens and Tayles (2000) revealed that the SMA information usage was associated with greater performance. Sari (2005) found a positive relationship between the SMA information usage and organizational performance among companies in Indonesia. Hence, it is proposed that the use of SMA information is positively related to organizational performance. Thus the following hypothesis is proposed:

H1: There is a significant positive relationship between the SMA information use and customer service process performance of Malaysian LGAs

Information Technology Competency and Customer Service Process Performance

IT studies found support for the direct positive impact of IT competency on organizational performance. For example, Bharadwaj (2000) discovered that firms with strong IT competency were able to obtain a superior performance

as compared to those firms with less effective IT competency. The findings in a study carried out by Huang and Liu (2005) provided evidence on the positive relationship between IT competency and organizational performance. Other studies examining the impact of IT competency on organizational performance provided almost consistent findings (such as Tanriverdi, 2005; Ravinchandran and Lertwongsatien, 2005; Tippins and Sohi, 2003). Strong IT competency enhanced an organization's ability to obtain information about markets and customers, which in turn helped the organization to be more attuned to changes in the environment, resulting in favourable performance. However, these studies were conducted mainly on large private sector firms.

Empirical studies examining the effects of IT competency on public sector performance have not been thoroughly explored. However, many scholars believe that IT competency could help the public sector organizations in improving their performance. For example, they argued that IT competency enhances internal processes as well as interaction with their constituencies (Chircu and Lee, 2003); enhance organization innovativeness and simultaneously address the challenges faced by them (Berlinger and Te'eni, 1999; Burt and Taylor, 2000); and improve communication and coordination, expand citizen participation and increase public sector accountability (Kamal, 2006; Sanchez, Koh, Kappelman and Prybutok, 2003). An organization with a higher level of IT competency is therefore expected to outperform those with less sophisticated IT. Ghani and Said (2010) found that LGAs with a high level of IT competency led to better service quality performance. Based on the results of the empirical studies identified, IT competency impacts performance of firms in the private sector. LGAs are faced with the challenge of providing efficient and effective service to a stable pool of long-term customers, with unquenchable thirst for fast service. Given the fact that public sectors are now facing similar changes as firms in the private sector, the following hypothesis is proposed: *H2: There is a positive relationship between IT competency and customer service process performance of Malaysian LGAs*

Interaction of SMA Information Use and IT Competency

This hypothesis investigates the interactive impact between SMA information use and IT competency on organizational performance. The

Information Processing Theory suggested that a firm can meet its increasing information, communication and coordination needs by increasing its information processing capacity (Galbraith, 1973). Organizations practicing SMA through benchmarking, competitors' performance evaluation, quality costing and strategic planning have a huge amount of information to process (Cadez and Guilding, 2008). This in turn leads to the need to have a more varied information processing facilities which would lead to a demand for a comprehensive and higher IT competency. Bharati (1998) argued that IT competency enabled the information to be collected, stored, retrieved and analyzed at a faster rate with less error and at a higher speed.

Organizations with a high level of IT competency should lead to efficient management and timely processing of information. Lu (2006) argued that the existence of IT competency has enabled better planning, decision-making and resource allocation for the betterment of the organization. So consequently, LGAs with a high level of IT competency would be able to provide prompt and efficient service leading to high customer satisfaction.

The positive effects of resource combination on organizational performance have been extensively discussed in the IT literature. The Resource Based View (Barney, 1991) suggested that the advantage of IT can be protected by embedding it in an organization through complementary and co-specialization (Powell and Dent-Micallef, 1997). Complementary represents an enhancement of resource value and this arises when a resource produces greater returns in the presence of another resource than by itself. When resources have complementarities, their potential to create value is particularly enhanced (Milgrom and Roberts, 1988). The integration of SMA practices and IT competency may improve connectivity and be more responsive to customers' request. A complementary interaction of IT competency and SMA information could produce a mutually reinforcing performance enhancer for organizations. This is supported by Zhu (2004) who suggested that IT competency enabled an organization to improve its interaction with customers as well as data processing capabilities.

Studies examining the combined effects of IT competency and other organizational factors have been well established in the literature. Powell and Dent-Micallef (1997) found that IT competency enhanced performance when it was used to leverage pre-existing, complementary human and

business resources. Similarly, Neo (1988) argued that IT could help to facilitate successful outcomes especially when integrated into the firm's strategic planning process. Ravinchandran and Lertwongsatien (2005) examined the interaction between IT competency of the Information System (IS) resources, IS capabilities, IT support for core competencies on firm performance and found that an organization's ability to use IT to support its core competencies was dependent on the IS functional capabilities, which in turn, was dependent on the nature of human, technology, and relationship resources of the IS department. Similarly, Bhatt and Grover, (2005) found that the synergy between IT competency and non-IT elements contributed to better organizational performance. Powell and Dent-Micallef (1997), in investigating the linkages between IT as technology resources and firm performance in the retail industry based on an integrative, resource based theoretical framework on the complementary relationship between IT and six human resources and six business resources, discovered that IT provided an advantage through leveraging intangible, complementary human and business resources. Ray, Muhanna and Barney (2005) examined the extent of technical IT skills, generic technologies, IT spending, flexible IT infrastructure and shared knowledge on the customer service process performance and their findings suggested that the interaction between shared knowledge and generic technologies enhanced customer service performance. Although these empirical studies did not specifically examine the combined effects of IT competency and SMA information, similar effects can be expected. Hence, the following hypothesis is proposed:

H3: The interaction between SMA information use and IT competency contributes positively to customer service process performance of Malaysian LGAs

Control Variables

Two variables: size (measured in terms of revenue), and the number of employees are used in this study to control their confounding effects of LGAs performance. As an organization increases in size, its chances for survival and growth also increase (Drummond and Chell, 1994; Hager, 1996 and Razin, 1999). Other studies (such as Hager, 1996; Razin, 1999) argued that size may influence organizational performance. Hence, in this study, the number of employees and size of LGAs as measured in terms of revenue collection are used as the control variables so as to avoid the confounding

effect of this factor on organizational performance. The organizations are categorized as small or large. In this study, District councils are considered as small size LGAs whereas Municipal and City Council are categorized as large. A dummy coded variable of “0” = district council and “1” = municipal and city councils is used in this study.

INSERT FIGURE 1 ABOUT HERE

Methodology and Research Design

Sample

Structured questionnaires were distributed to all Malaysian LGAs. There are 146 LGAs in Malaysia. All the 146 LGAs were invited to participate in this study to maximize the possible respondents. The population frame was obtained from the Ministry of Housing and Local Government of Malaysia. The principal informant method was used and the Mayor or president was identified as the key informant. This was considered as the most appropriate approach as the Mayor or president is best positioned to have the broadest knowledge of the issues under investigation.

Measurement of Variables

SMA information use

The measurement of SMA information used was adopted from Guilding (2001) and Guilding, and McManus, (2002) with appropriate contextual modification. Respondents were asked to rate on a seven point scale ranging from (1= never use at all, to 7= extensively use) on six SMA techniques chosen for this study: benchmarking, integrated performance measurement, strategic planning, value chain analysis, quality costing, and comparative performance evaluation. In the questionnaire respondents were asked “To what extent does your organization adopt the following technique?” (See appendix).

IT competency

The measurement of IT competency was adopted from models proposed by Tippins and Sohi, (2003), Bhatt and Grover (2005) as well as Tanverdi

and Zehir (2006). The construct comprised three components, namely IT infrastructure, IT knowledge, and IT usage. Two statements were used to measure the availability of IT hardware and software and another two questions on the external and internal linkages of staff's work station by IT. IT knowledge was conceptualized as the extent to which a firm possessed a body of technical knowledge about objects such as computer-based systems. IT knowledge consisted of three questions on the level of IT expert, the organization owned and the opportunities given to its IT staff members to enhance their IT competency. IT usage was conceptualized as the extent to which a firm utilized IT to manage customer information and to enhance service quality. It emphasized a firm's technology capability in processing information, producing timely and accurate data, and improving business process (Bhatt and Grover, 2005; Tanverdi and Zehir, 2006; Tippins and Sohi, 2003).

Customer service process performance

The measurement of service quality performance was adapted from Parasuraman, Zeithaml and Berry (1988). Respondents were asked to rate their customer service process performance in terms of reliability, responsiveness, assurance, empathy and tangibility and they were asked to evaluate their customer service process performance for the past 3 years against average performance using a scale ranging from 1 (much worse) to 7 (much better) on reliability of service delivery, level of staff responsiveness in attending to customers' issues and requests, staff competency in carrying out tasks, staff skills in providing accurate service received by customers.

Results and Discussion

Of the 146 questionnaires distributed, 109 were returned representing a response rate of 75%. Before testing the hypotheses in this study, tests of reliability, normality and response bias were performed. SPSS package version 15 was used to perform the reliability test for each construct. The coefficient alpha of each construct was compared to the cut-off value of .70 suggested by Nunnally (1978). Skewness and kurtosis test were carried out to confirm the normality of data distribution. The z-value for skewness and kurtosis for all the variables ranged from .664 to -.852 indicating that normality could be assumed at the .01 probability level. Response bias

test was also conducted. The response from the first mailing that was received before the deadline and the second mailing after the phone call reminder was compared. Levene's test for equality of variances showed values ranging from 0.594 to 0.980 ($p > .05$), indicating that there was no significant difference between the mean score of the two groups, that is, no response bias was detected. The results of the correlation test provided a preliminary finding on a significant positive relationship between SMA information use and customer service process performance ($r = 0.466$). The relationship between IT competency to customer service process performance also showed a significant positive relationship ($r = 0.522$). Table 1 summarizes the findings of Skewness, Kurtosis, Reliability and Pearson Correlation Coefficients

INSERT TABLE 1 ABOUT HERE

Hierarchical regression analysis was used for hypotheses testing because this procedure allowed for certain variables to be controlled such as size of an organization and number of employees. In addition, the hierarchical regression analysis was able to isolate the results of the main effects and the interaction effect as recommended by Arnold (1982), Draper and Smith (1981) and Howell, Dorfman and Kerr (1986).

Testing the model involved testing a set of three models with each indicator of customer service process performance. First, the base model (Model 1) was the model with the control variables: size of LGAs and number of employees. In the second model (Model 2), the main variables: SMA information use and IT competency were entered. Finally, the interaction term was entered into Model 3. The aggregate effects of the model on customer service process performance were tested. A general F test for an increment in R- square (Cohen and Cohen, 1983) was also performed for each model to examine the significance of the model. The hierarchical regression equations are as follows:

1. $Y = \alpha + \beta_1X_1 + \beta_2X_2 + e$
2. $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$
3. $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e$

INSERT TABLE 2 ABOUT HERE

In this study, for each multiple regression model, the tolerance statistics and Variance Inflation Factor (VIF) values were examined for evidence of multicollinearity. Generally in all multiple regression models, the VIF values were well below 10 or 5 and tolerance statistics were well above 0.1 or 0.2 (Hair, Black, Babin, Anderson, and Tatham, 2005). Therefore, it can be concluded that there was no multicollinearity within this data or multicollinearity was absent in each of the multiple regression model used in this study. Table 2 presents the results of the hierarchical regression analysis to test the impact of SMA information use and IT competency on customer service process performance of Malaysian LGAs. Model 1 included the control variables only. In model 2, the inclusion of the independent variables increased the explanatory power of customer service process performance significantly (R^2 increases from 0.002 to 0.357, $p < 0.01$). The whole model attained a significant level of the variation of customer service process performance ($R^2 = 37$ percent)

SMA information use did positively affect customer service process performance of Malaysian LGAs ($\beta = .256$; t value = 3.281, $p = .001$). Hence, H1 was accepted. This implied that the use of information provided under the SMA technique enabled top management of Malaysian LGAs to react better in response to changes of the needs of customers. This is consistent with Elnathan, Lin and Young (1996) who found that the practice of benchmarking technique in a competitive environment led to better performance. The use of information through the SMA technique of benchmarking, integrated performance measurement and the value chain analysis, quality costing and competitors' performance comparison has enabled managers to learn from external organizations. This has allowed the managers to plan and identify means and ways of improving customer service process performance. This finding is also consistent with that of Cadez and Guilding, (2008); Collier and Gregory (1995); Dixon (1998); Lord (1996); Rickwood et al. (1990). This result is also in line with the long held view of management accounting textbooks that argued for the proper use of accounting information with the potential to improve firm performance (Kaplan and Atkinson, 1998; Drury, 2000).

Table 2 shows that there was a significant positive relationship between IT competency and customer service process performance ($\beta = .479$; t value = 6.256 and $p = .000$). Hence, H2 was supported. Malaysian LGAs with a high level of IT competency had the ability to improve service reliability, reduce transaction errors and increase consistency in performance. It enabled firms to create better customized or individualized services. According to Quinn, Baily, Herbert, and Willett, (1994), LGAs with sophisticated IT infrastructure, IT knowledge and IT usage were expected to have greater ability to increase their customer service quality. Existing literature suggested a positive relationship between IT competency to organizational performance (Hitt and Brynjolfsson, 1996; Bharadwaj, 2000; Santhanam, 2003; Zhu, 2004). The finding of this hypothesis suggested that LGAs with high IT competency were able to satisfy their customers through efficient quick delivery of required service. Since the introduction of e-procurement and e-payment by many LGAs contractors found that the procedure was faster and more importantly for them, this had cut the red-tape processing time (Wee, Othman, Abdul Rahman, Omar, and Nurul Husna, 2011). Thus, the finding extends what has been found in the existing literature.

H3 argued that the interaction between SMA information and IT competency could further enhance customer service process performance. The finding demonstrated that the interaction between SMA and IT competency was significant ($\beta = .148$, $t=2.306$, $p = 0.023$), thus indicating that Malaysian LGAs that used extensive SMA information supported with higher level of IT competency had more ability to enhance their customer service process performance. The extensive use of SMA technique provided more strategic information to managers, and a high level of IT competency enabled this information to be stored, retrieved and processed effectively and efficiently. This finding supported the RCT's argument that the interaction between two or more capabilities could create valuable resources that lead to better performance, in this case better customer service process performance.

Conclusion

In line with the government's emphasis on the performance of the public sector agencies in Malaysia, this study focused specifically on customer service process performance. Although there were many factors that could

have contributed to better customer service process performance, the use of SMA has been identified as an effective tool to overcome the inherent limitations of traditional management accounting (Smith, 2000; Lamberti and Noci, 2006) in improving performance. According to Guilding (2000), the information needed for organizations to sustain its competitive advantage should also provide insight into internal operations as well as external related information (for example, information about customers). Guilding also suggested the use of non-financial related information such as productivity and efficiency of processes and the quality of output. Therefore, an extensive use of SMA information would result in better customer service process performance. The results of the regression analysis supported this argument. This finding was consistent with that of Cadez and Guilding, (2008) who found a positive relationship between the SMA information use and performance among large Slovenian companies. Similar results were found in a study by Sari (2005) among companies listed in the Jakarta Stock Exchange.

In an intensely competitive environment, the use of SMA information derived from the adoption of the SMA techniques such as benchmarking technique, integrated performance measurement, strategic planning, quality costing and competitors' performance evaluation provided strategic information for LGAs to respond to customers. The use of strategic information enabled organizational staff members to examine the relevant best practices of the benchmarked organization and to seek ways and means to adopt and improve upon its application in their own organizations. This allowed the managers to plan and identify means and ways to increase the speed and accuracy of work processes and reduce processing time.

While extant studies (e.g. Hitt and Brynjolfsson, 1996; Bharadwaj, 2000; Santhanam and Hartono, 2003; Zhu, 2004) focused on IT competency and financial performance, this study on IT competency and customer service processing performance revealed the importance of IT competency in improving customer service processing. IT competency also enabled Malaysian LGAs to provide facilities such as online payment, payment by credit card and payment deposits into the selected banks. In addition, high IT competencies were able to reduce staff members' time of dealing with customers face to face. Important information such as tender, tender progress, procedures and forms were all been made available on their

websites (Wee et al., 2011). Furthermore, IT competency enabled LGAs to perform their tasks in a more accurate and faster way. IT competency is crucial in the implementation of e-transactions, which leads to a significant reduction in the number of personnel having to deal with customers necessary to complete a task and at the same time improve the speed and accuracy of the work process. These online services, that were made accessible to the members of the public at any time and from any place without being constrained by the Malaysian LGAs working hours, led to better quality service among the Malaysian LGAs.

Limitations and Future Research

There are several limitations in this study. First, the sample was taken from a single group, namely LGAs. Although this sampling frame allowed the control of other factors, it was not certain if the findings of this study could be generalized to other public sector organizations. Replication of this study to other sectors would be useful in order to address the question of generalizability. Second, the use of single informants as a source of information for both the dependent and independent variables may lead to bias results. Although the use of single informants remained the primary research design in most studies (Prieto and Revilla, 2006), the use of multiple data source such as objective data would increase the validity of the finding. Third, this study provided a cross sectional picture at a single point in time, which meant that the recommendations were applicable only if the external variables were unaffected. Nonetheless, the findings on the consequences shed some light on the impact of SMA information use and IT competency on customer service process performance.

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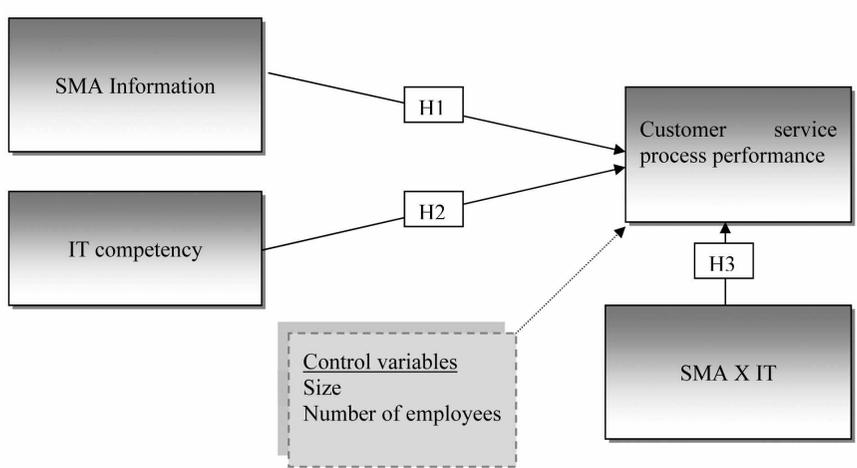


Figure 1: Conceptual Framework

Table 1: Results of Skewness, Kurtosis, Reliability and Pearson Correlation Coefficients

Variables	Skewness	Kurtosis	Cronbach Alpha	1	2	3
1.SMA Information use	-.852	.446	.864	1		
2. IT competency	-.685	.776	.894	.476(**)	1	
3. Process performance	-.656	.347	.887	.466 (**)	.522(**)	1

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

Table 2: The Effects of Organizational Capabilities on Customer Service Process Performance

	DV: CUSTOMER SERVICE PROCESS PERFORMANCE								
	Model 1			Model 2			Model 3		
	β	t	Sig	β	t	Sig	β	T	Sig
Constant	4.846	47.359	0.000	1.770	4.757	.000	1.388	3.452	.001
Size of LGAs	-.104	-.260	.759	.056	.172	.863	.004	.012	.990
No of emp	.361	.932	.353	-.326	-.995	.322	-.308	-.955	.341
SMA				.208	2.726	.007	.256	3.281	.001
IT				.462	5.961	.000	.479	6.256	.000
SMAx IT							.148	2.306	.023
Δ in R ²	0.017			.359			.024		
Adjusted R ²	.002			.357			.377		
Sig F Δ	.313			.000			.023		

Appendix (Questionnaire items for SMA technique)

Benchmarking

The comparison of internal processes to an ideal standard.

Competitor performance appraisal

The numerical analysis of a competitor’s published statements as a part of an assessment of a competitor’s key sources of competitive advantage.

Integrated performance measurement

A measurement system which focuses typically on acquiring performance knowledge based on customer requirements and may encompass nonfinancial measures. This measure involves departments monitoring those factors which are critical to securing customer satisfaction.

Quality costing

Quality costs are those costs associated with the creation, identification, repair and prevention of defects. These can be classified into three categories: prevention, appraisal, and internal and external failure costs. Cost of quality reports are produced for the purpose of directing management attention to prioritize quality problems.

Value chain analysis

An activity-based approach where costs are allocated to activities required to design, procure, produce, market, distribute, and service a product or service.

Strategic planning

The process of determining a company's long-term goals and then identifying the best approach for achieving those goals.