

EDUCATION INFORMATION SYSTEMS PLANNING PRACTICES AND PERFORMANCE OF GOVERNMENT AGENCIES IN MALAYSIA

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Abstract

The relevance and applicability of Strategic information systems planning (SISP) to both private and public organizations have been emphasized in some literatures. However, the literature review indicates that there are not many studies that have attempted to examine the correlation between SISP practices and performance of organizations in the public sector. In an attempt to address this issue, this study examined the correlation between SISP practices and performance of government agencies. The data for the study were collected from 54 government agencies in Malaysia that adopted the SISP. The data analysis was done in several stages of analysis that include a) descriptive analysis, consisted of mean, median, standard deviation, and frequency distribution per class; and b) the interpretation of multiple regression analysis. Based on the analysis of the data collected from the government agencies, the results of the study indicated significant positive correlation between SISP practices and performance of the agencies.

Keyword: Education Information Systems, and performance

1. Introduction

Strategic information systems planning (SISP) has gained much recognition and acceptance as an important management practice as well as process for improving organizational performance in both private and public organizations. Since its introduction, SISP has received much attention among practitioners, consultants, and scholars. The focus and emphasis on SISP resulted from the strong notion that as practice and process, it can help organizations to improve not only their performance but also their competitiveness.

Although SISP has received much attention in recent years, minimal research emphasis has been given to investigate its correlation to organizational performance. The literature reveals that there are limited empirical studies that have attempted to investigate the correlation between SISP and organizational performance, especially among government agencies in Malaysian context. In particular, the literature review indicates that the scope and focus of past studies are not only limited but also have the tendency to mainly concentrate on the adoption of SISP in business organizations.

More specifically, the review of previous studies appear to suggest that the past research primarily addressed issues such as SISP practices, SISP process, SISP success, SISP methodologies, success

factors of SISP, strategic alignment in SISP, SISP approaches, and SISP implementation (Khani, Md Nor, Samani, and Hakimpoor, 2012; Gufroni, 2011; Khani, Md Noor, Bahrami, 2011; Issa-Salwe, Sharif and Ahmed, 2011; Al-Aboud, 2011; Pollack, 2010; MdBasir and Norzaidi, 2009; Abu Bakar, Suhaimi and Hussain, 2009; Pita, Cheong and Corbitt, 2008; Teubneur, 2007).

There is, therefore, a need for more empirical research that examines SISP in government agencies. Empirical studies in this area would not only provide profound insight into the adoption of SISP among government agencies, but would also be useful to government agencies striving to improve their performance. The purpose of this study is to examine the correlation between SISP practices and performance of government agencies.

2. Literature Review

The literature indicates that there is not even one universally accepted definition of strategic information systems planning (SISP). The review of literature reveals that different practitioners, consultants, and scholars used different definitions to describe SISP. In general, however, many of the definitions presented in the literature tend to describe SISP as a management practice and process that helps organizations to identify as well as select suitable computer-based applications for the purpose of developing their strategic plan and for improving their organizational performance.

The study conducted by Issa-Salwa, Sharif, and Ahmed (2011) defined SISP as the process of identifying a portfolio of computer-based applications that can be put into practice and in which it can positively align with corporate strategy. In addition, the study indicated that SISP process consists of three important activities. These three activities include deciding the correct portfolio of information systems, determining the objectives for the organizational computing, and identifying the potential computer applications for implementation.

In another study, Gufroni (2011) suggested that organizations used SISP process to help them develop their information systems that can align with their organizational objectives, policies, and strategic planning. However, in preparing for the SISP process, the author emphasized that organizations need to conduct internal and external business environment analysis.

By using resource-based approach, the study Khani, MdNor, and Bahrami (2011) suggested the need for organizations to emphasize on information systems capabilities (IS capabilities) when developing their SISP. According to the study, IS capabilities such as financial, human resources, technical, and business dimensions (which includes alignment, analysis, cooperation, improvement in capabilities, and contribution) of information systems can influence SISP success.

Over the years, several studies have attempted to investigate the correlation between SISP and organizational performance. These studies have provided evidence that indicated positive correlation between the adoption of SISP and organizational performance (Rockart, Earl and Ross, 1996; Ross, Beathand Goodhue, 1996; and Santhanam and Hartono, 2003). The study conducted by Gold, Malhotra and Segars, (2001) indicated that adequate IT infrastructure in the SISP can help improving the performance of an organization. In another study, Bharadwaj (2000) found a direct positive correlation between IT capabilities and organizational performance. Furthermore, the findings of the study by Kontoghiorghes and Hansen (2004) showed that the assimilation of IT in SISP have resulted in improved organizational performance in other areas such as productivity and competitiveness.

3. Methodology

In Malaysia, the Malaysian Administrative, Modernization and Management Planning Unit (MAMPU) is responsible for coordinating the development of SISP in all government agencies. Given this, this study used the listing of the government agencies obtained from the MAMPU as its sampling frame. The listing consisted of 138 government agencies that have adopted SISP. The data were collected by using a structured questionnaire. Questionnaires were sent to the 138 government agencies. However, of the 138 agencies, only 54 agencies completed and returned the questionnaires. The questionnaires

were filled by the Director, Department Head, and Information Technology Officer of each government agency.

The questionnaire adopted in this study consisted of three sections. The first section consisted of items that were used to obtain general information concerning the background of the respondents and the characteristics of their agencies. The 11 items in section two were designed to capture SISP practices adopted by the government agencies. The respondents were asked to rate each item on a five-point scale ranging from (1) or almost never to (5) or almost always. The remaining six items in section three were used to measure the performance of the government agencies in the study. The performance was measured in terms of time efficiency, access to information, level of operations, delivery of services, forecasting, and expenditure.

The validity of the instrument data was compiled and tested each one, the same respondents. The results or scores of both instruments for each subject were paired to be calculated the correlation *product moment*.

$$r_{XY} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2\}}} \quad (1)$$

Reliability analysis item was used to determine the level of reliability of research instrument. The data were analyzed through trial data, in which the answer is more than two options. The data analysis was conducted after the data drop is eliminated. The calculations were done by using Cronbach Alpha formula:

$$r_{11} = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma_b^2}{\sigma_t^2} \right] \quad (2)$$

Data analysis was done in several stages of analysis that includes a) descriptive analysis, consisted of mean, median, standard deviation, frequency distribution per class; and b) the interpretation of multiple regression analysis.

4. The Results

SISP Practices

Table 1 presents the means and standard deviation scores of the eleven items that were used to measure the SISP practices adopted in this study. The 11 dimension of SISP practices serve as the basis for querying the SISP practices adopted by the 54 government agencies that participated in this study. As indicated in Table 1, the mean scores for the eleven items ranged from 3.05 to 3.95. The high mean values suggest that most of the government agencies in the study adopted the SISP practices as advocated in the literature.

Table 1: Mean and Standard Deviation (SD) Scores of SISP Practices

SISP Practices	Mean	SD
Implementation of SISP involves all departments in the organization	3.73	1.134
Department that defines information technology projects in the SISP has been given responsibility for implementation	3.71	1.110
Provides the necessary infrastructure for the implementation of SISP	3.58	1.101
Provides the necessary info-structure for the implementation of SISP	3.60	1.069
Monitors the implementation of projects in the SISP	3.70	1.072
Provides continuous training to staff in preparation for the execution of SISP	3.05	1.091

Practices the concept of knowledge sharing among staff	3.38	1.038
Adopts transparency in performing acquisition planned in the SISP	3.95	1.069
Makes amendments to the SISP according to the technological advances	3.29	1.038
Financial allocation given priority in executing information system projects that has been planned in the SISP	3.14	1.194
Changes in SISP involved top-down approach	3.16	1.082

Organizational Performance

The means and standard deviations scores of the six items that were used to measure the performance of the government agencies involved in this study are summarized in Table 2. As shown in Table 2, the mean scores for the six measures of performance ranged from 3.52 to 3.89. At the general level, these mean scores suggest that most of the government agencies in the study agreed that their agencies have achieved more than satisfactory level of performance after the adoption of SISP in their organizations.

Table 2: Mean and Standard Deviation (SD) Scores of Performance

Performance Measures	Mean	SD
Time efficiency	3.86	.910
Improved access to information	3.89	.873
Increased the level of operations	3.78	.822
Improved delivery of services	3.86	.886
Improved forecasting	3.55	.875
Reduced expenditure	3.52	.938

Correlation between SISP Practices and Performance

Table 3 presents the results of the correlation analyses between 11 dimensions of SISP practices and the performance of 54 government agencies that were involved in this study. The results as presented in Table 3 show positive correlation between 11 practices and performance as measured in terms of time efficiency, improved access to information, and increased level of operation.

5. Discussion And Conclusions

This study attempted to examine the correlation between SISP practices and performance of government agencies in the public sector in Malaysia. The results of the correlation analyses of the data collected from 54 government agencies that participated in this study indicate statistically positive correlation between SISP practices and the performance of these agencies. These results further support previous studies suggesting that correlation exist between SISP practices and organizational performance. The findings of previous studies by Rockart, Earl and Ross, (1996) Ross, Beath and Goodhue (1996), Bharadwaj (2000), Gold, Malhotra and Segars, (2001), Santhanam and Hartono (2003), and Kontoghiorghes and Hansen (2004) have shown positive correlation between the adoption of SISP and organizational performance.

Based on the results of this study, several findings can be concluded. First, the empirical results of this study provide evidence suggesting that SISP practices are positively associated to organizational performance. Second, in terms of the adoption of SISP practices, the results of this study appear to indicate that 54 government agencies in the research followed the practices as discussed and emphasized in the literature. Third, generally, the findings of the study show that the 54 agencies focused on SISP practices that have resulted in the improvement of their organizational performance.

Finally, these findings offer the following managerial implications to government agencies in Malaysia. The findings of this study indicate that positive correlation exists between the adoption of SISP and organizational performance. More importantly, the positive correlation between SISP practices and organizational performance suggest that in order to improve their performance, these

government agencies need to not only adopt SISP but also be able to identify and use the right SISP practices.

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