Factors Influencing the Adoption and Implementation of Accounting Information Systems in Manufacturing Firms: Thailand Evidence

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Abstract

Accounting Information Systems (AIS), play an important role in business management strategies and can provide assistance in all phases of decision making. Thus, many organizations need to be seen as adopting AIS, which is critical for a company to organize, manage and operate its processes. In order to implement AIS successfully, it is important to understand the underlying factors that influence AIS adoption. Therefore, this research intends to study this perspective of factors that influence and impact successful AIS adoption and related AIS performance. Case study and survey methodology was adopted for this research. Case studies in two Thai-organizations were carried out. The results of the two main case studies suggested 9 factors that may have an impact on AIS adoption, which led to the development of the preliminary framework. Next, a survey instrument was developed based on the findings from case studies. Survey questionnaires were gathered from 189 respondents from two large-scale surveys were sent to selected members of Thailand accountant, and Thailand computer to test the research framework. The results indicate that the top three critical factors for ensuring AIS adoption were: 1) top management support; 2) user training and education, and; 3) steering committees.

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Moreover, the results show that user involvement and continuous improvement budget significantly contributed to system quality. Second, technical capability of IS personnel, user training and education, understanding of accounting information system and continuous improvement budget significantly contributed to user satisfaction. Thirdly, user training and education and continuous improvement budget showed statistically significant as information quality. All factors were statistically significant at the 0.05 level. Therefore, it is now clear which factors are influencing AIS adoption and which of those factors are critical success factors for ensuring AIS adoption in organization.

Keywords: Accounting Information Systems, Accounting Information Systems Adoption, Factors influencing AIS adoption

ปัจจัยที่มีอิทธิพลต่อความสำเร็จของการนำระบบสารสนเทศทางการบัญชีมาใช้ในอุตสาหกรรมการพลิตในประเทศไทย

*มณีรัตน์ วงษ์ซิ้ม**

บทคัดย่อ

ระบบสารสนเทศทางบัญชีมีบทบาทสำคัญยิ่งในการจัดการกลยุทธ์ธุรกิจ และสามารถช่วยสนับสนุนการตัดสินใจในทุกขั้นตอน ดังนั้น หลายองค์กรจึงให้ความสำคัญกับการนำระบบสารสนเทศทางบัญชีเข้ามาใช้ในองค์กรซึ่งเป็นสิ่งสำคัญสำหรับองค์กรในการจัดระบบการทำงาน การจัดการ และกระบวนการปฏิบัติงาน เพื่อให้การพัฒนาระบบสารสนเทศทางบัญชีประสบความสำเร็จ องค์กรต้องให้ความสำคัญเกี่ยวกับความเข้าใจปัจจัยที่มีอิทธิพลต่อการนำระบบสารสนเทศทางบัญชีเข้ามาใช้ในองค์กร ดังนั้น การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่มีอิทธิพลและส่งผลกระทบต่อความสำเร็จในการนำระบบสารสนเทศทางบัญชีเข้ามาใช้ซึ่งมีผลกระทบต่อระบบสารสนเทศทางบัญชีขององค์กร ระเบียบวิธีวิจัยที่ใช้ในการศึกษาครั้งนี้ ได้แก่ การศึกษาจากกรณีศึกษา และการสำรวจข้อมูลเชิงปริมาณ การเก็บรวบรวมข้อมูลจากกรณีศึกษาจาก 2 องค์กรขนาดใหญ่ในประเทศไทย พบว่ามี 9 ปัจจัยแล้วนำมาสร้างกรอบความคิด และทำการทดสอบกรอบความคิดโดยใช้แบบสอบถามเป็นเครื่องมือเก็บรวบรวมข้อมูลจากพนักงานบัญชีและพนักงานคอมพิวเตอร์ในประเทศไทย จำนวน 189 คน พบว่า ปัจจัยที่ส่งผลกระทบต่อการนำระบบสารสนเทศทางบัญชีเข้ามาใช้ 3 ลำดับแรก คือ 1) ด้านการสนับสนุนจากผู้บริหารระดับสูง 2) ด้านการฝึกอบรมและการให้ความรู้แก่ผู้ใช้งาน และ 3) ด้านคณะกรรมการกำกับดูแลโครงการ

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ผลการวิเคราะห์ข้อมูลพบว่า 1) ปัจจัยด้านคำนึงถึงผู้ใช้ระบบ และด้านการจัดหางบประมาณอย่างต่อเนื่อง มีความสัมพันธ์กับด้านคุณภาพของระบบ 2) ปัจจัยด้านความรู้ความสามารถของผู้พัฒนาระบบบัญชี ด้านการศึกษาและการฝึกอบรมของผู้ใช้ ด้านความเข้าใจของระบบบัญชี และด้านการจัดหางบประมาณอย่างต่อเนื่อง มีความสัมพันธ์กับด้านความพึงพอใจของผู้ใช้ 3) ปัจจัยด้านคำนึงถึงผู้ใช้ระบบ และด้านการศึกษาและการฝึกอบรมของผู้ใช้มีความสัมพันธ์กับด้านคุณภาพข้อมูลสารสนเทศอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 การศึกษาครั้งนี้นับเป็นการสร้างความเข้าใจเกี่ยวกับปัจจัยที่มีอิทธิพลต่อการนำระบบสารสนเทศทางบัญชีเข้ามาใช้และปัจจัยเหล่านี้ส่งผลต่อความสำเร็จในการนำระบบสารสนเทศทางบัญชีมาใช้ในองค์กร

คำสำคัญ: ปัจจัยที่มีอิทธิพลต่อความสำเร็จของการนำระบบบัญชีมาใช้ในอุตสาหกรรมการผลิต ระบบสารสนเทศบัญชี

1. Introduction

Today businesses continuously seek to improve the efficiency and effectiveness of their operations to gain higher profitability through increasing productivity by using Accounting Information Systems (AIS). AIS is a system that has the functions of data gathering, processing, categorizing and reporting financial events with the aim of providing relevant information for the purpose of decision-making (Ismail, 2009). AIS is an essential tool for doing business now and in the future. Several authors (e.g., Nicolaou, 2000; Xu, 2000; Ussahawanitchakit & Phonnikornkij, 2006; Neely & Cook, 2011) note that an AIS, is a discipline within information systems, that requires high quality data and information for decision making. Thus, many organizational needs have to be recognised, when adopting an AIS, as this is critical for a company for it to organise, manage and operate processes across all areas. Recently, when adopting AIS, some organizations used AIS vendors for the adoption of accounting information systems proposed by the software vendors to the organizations who want to adopt their solutions. Other organizations used generic framework adoption guidelines by COBIT (Control Objectives for Information Related Technology), ITIL (the Information Technology Infrastructure Library), and SDLC (Systems development life-cycle) to indicate how to select and adopt an AIS, but none are specific for AIS adoption. Moreover, adopting management accounting systems is important in an organization.

In order for an AIS to be successful, it is important to understand the underlying factors that influence the AIS adoption's quality. Xu & Al-Hakim (2005) indicated the critical factors affecting data quality of AIS by surveying an Australian organization. Top five critical factors for data quality in AIS and the ranking based on the mean importance rating are: 1) Input control; 2) Nature of AIS; 3) Top management commitment; 4) middle management commitment and; 5) user focus. What is more, Sirisom et al. (2008) report on the implementation of an AIS to enhance the performance of Thai listed firms, indicating that the effect of organizational characteristics on implementation of AIS can be seen from five perspectives including the general environment and the four major accounting stages-the expenditure cycle, revenue cycle, production cycle, and financial accounting cycle. Furthermore, this evidence suggests that organizational contextual variables should be examined in the process of AIS design

in order to enhance their implementation effectiveness.

Other areas affect accounting management; Soderstrom, Naomi & Kevin (2007) argue that three factors have specific effects on accounting quality, being the quality of the standard, a country's legal and political system, and financial reporting incentives. This is specific in accounting information systems (Soderstrom et al., 2007). Thus, a business needs to be seen as a system using accounting information effectively, requiring quality data in the organization to perform well, obtaining competitive advantage, and thus surviving in today's global economy.

Interestingly, organizations have become more attentive to improving their accounting information systems in order to achieve a competitive advantage to compete in the global economy, and manage a rapidly growing business environment. Thus, there is a growing need for research to provide insight into issues and solutions related to management, in AIS adoption (Xu, 2003). Therefore, this research attempts to investigate the effect of other factors revealed in the adoption of AIS in order to enhance firm performance.

Research Questions

The goal of this research is to develop a framework for factors influencing the adoption and implementation of AIS to provide guidance for AIS adoption. In terms of achieving this objective, the following questions were investigated:

What factors affect the variation of quality in accounting information systems adoption, and why?

This research was conducted in manufacturing firms in Thailand, which have adopted and implemented accounting information systems.

Research Objective

This research addresses various case studies of different organizations related to AIS adoption and implementation in Thailand. Outcomes of this research will contribute to substantial knowledge within AIS adoption and implementation fields and it also supports other research areas. The following emerge as significant objectives:

1. To study the relationship between factors influencing the adoption and implementation of accounting information systems in manufacturing firms.

2. To study the critical success factors that could influence the AIS effectiveness.

3. To enhance the existing AIS research by providing an in-depth study that represents a new aspect of factors influencing the adoption and implementation in applying AIS research.

4. To provide the substance of knowledge related to AIS management for organizational purposes.

2. Literature Review

This section discusses the theoretical foundations upon which this research is built.

2.1 Importance of Accounting Information Systems

A specialized information system automates the manual accounting processes and tasks, is often known as an AIS. An AIS can collect and store data about activities and transactions, and processes these data into information that is useful for decisions making. It also provides adequate controls to safeguard the organization's assets (Phonnikornkij et al., 2008; Romney & Steinbart, 2006; Ussahawanitchakit & Phonnikornkij, 2006). Therefore, the AIS can add value to an organization through efficiently doing those tasks that can be performed through automated systems.

The AIS can improve quality and reduce the costs of products or services, improve efficiency by being well-designed, and can make operations more efficient by providing more timely information, sharing knowledge, improving the efficiency and effectiveness of the supply chain, developing internal control structures and enhancing decision making (Romney & Steinbart, 2006). Moreover, several authors (e.g., Ismail & King, 2005; Nicolaou, 2000; Sirisom et al., 2008; Ussahawanitchakit & Phonnikornkij, 2006; Xu, 2003) argue that an AIS can provide assistance in all phases of decision making.

Nowadays, businesses continuously seek to improve the efficiency and effectiveness of their operations for higher profitability and increased performance through the use of accounting information systems. An accounting information system is essential to doing business now and in the future. Sajady, Ahvaz, Dastgir & Nejad (2008) note that accounting information systems are considered as important organizational mechanisms that are critical for the effectiveness of decision management and control in organizations.

2.2 Uniqueness of an Accounting Information System

Several authors state that accounting is the backbone of the business financial world (Kalaisel, 2011; Bhatia, 2008; Starkey & Tempest, 2008; Mowat, Zhang, & Wieler, 2002). Shiju (2010) indicates that the accounting information process consists of five parts. The first part is the various independent accounting subsystems, including human resource system, marketing information system, fixed assets, production information system accounting treatment, initialization; the second part is the accounting process part, where the main part is finishing; the third part is automatic transfer accounting which solves control and data transfer between subsystems and the accounting system; the fourth part is internal evaluation and monitoring, through value accounting to realize “control of process and conclusion of concept” and using value indexes to process data, predict the future and assist decision-making; the fifth part is financial reporting which provides financial reports for stakeholders, including balance sheet, income statement, cash flow statement and receipt and payment statement of the primary business statement of profit distribution, payable value added tax statement and financial analysis report etc. (Shiju, 2010). Xu (2003) indicates that accurate accounting records help to prepare financial statements. Financial statements help to secure investors and, thus, working capital.

In particular, AIS have become a unique software application and a work process for defining (and describing) information. Many aspects of accounting practice have been changed fundamentally by advances in IT, inculding financial reporting, managerial accounting, auditing and taxation (management) (Scapen & Jazayeri, 2003). More to the point, Xu (2000) indicates that AIS have specific functions, considering the importance of information quality in accounting and the profession’s dependence on AIS systems. Thus it is important for any accounting firm to incorporate the information quality

requirements during the system adoption process (especially in the case of adopting a commercial AIS system, of which the system design cannot be altered). Morover, findings from Davila, McLean (2004) state that management of AIS adoption involves the initial framing of the accounting adoption decision under relevant accounting standards Many organizations, concerned to manage all processes of accounting, find that the information system must be dependent on the accounting standards and laws of each country that relate to the new systems.

What is more, at present, AIS still present problems in organizations. Ismail (2009) argues that organization-wide implementation of a new accounting system may give rise to some problems in the process of development, specific features such as lack of software matched with the actual operational situation, or the lack of knowledge and vision in implementation of accounting software. Thus, this research intends to study the perspectives of factors influencing the adoption and implementation in AIS, for high work performance in the accounting systems.

2.3 AIS Adoption Process

Traditionally, adopting an AIS is defined as using computer hardware and software applications to support operations, strategic management, and decision making within a business. Some organizations choose implementation by employing an AIS vendor. Vendors such as SAP, Oracle, and Microsoft seek to integrate business management systems covering functional areas of an enterprise like Finance, Human Resources, Production, Sales and Logistics and more.

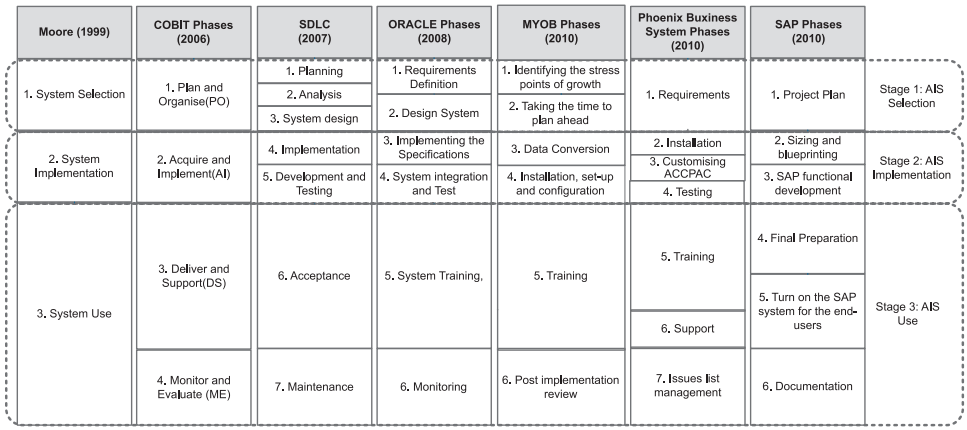

Figure 1 Existing adoption process (Koronios, Wongsim, Gao, 2013).

By reviewing a number of adoption processes and associated activities as illustrated below, this study has decided to simplify the adoption process to three stages: AIS Selection, AIS Implementation and AIS Use. Based on these three stages, AIS adoption issues and management approaches were studied (Koronios et al., 2013).

2.4 Factors influencing Information Systems Adoption

Several authors (e.g., Al-Mashari, Al-Mudimigh, & Zairi, 2003; Arunthari, 2005; Delone & McLean, 2003; Nah & Delgado, 2006; Ngai, Law, Wat, 2008; Somers & Nelson, 2004; Xu, 2003; Zhang, Lee, Zhang, & Banerjee 2003) state that to adopt IS successfully it is important to consider all the critical factors which influence system development, as shown in table 1.

Table 1 Factors influencing IS Adoption

Source: developed from the literature review

Factors influencing IS adoption	Rrobets & Barrar (1992)	Falkowski et al. (1998)	Bingi et al. (1999)	Buckhout et al. (1999)	Stefanou (1999)	Sumner (1999)	Rosario (2000)	Jarrar et al. (2000)	Wee (2000)	Delone & McLean (2003)	Buonanno et al. (2005)	Zhang, et al. (2005)	Chang et al. (2008)	Poba-Nzaou et al. (2008)	Ngai et al. (2008)	Al-Mashari et al. (2011)
Teamwork and composition		✓	✓	✓	✓	✓	✓		✓	✓					✓	
Change management program and culture	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Top management support	✓		✓	✓		✓		✓	✓		✓		✓	✓	✓	✓
Business plan and vision	✓	✓		✓			✓		✓		✓			✓	✓	✓
Business Process Re-engineering and minimum customization	✓		✓			✓	✓	✓	✓					✓	✓	✓
Effective communication		✓				✓	✓		✓		✓			✓	✓	
Project management		✓				✓	✓		✓					✓	✓	
Data management												✓			✓	
Software development, testing and troubleshooting			✓				✓		✓	✓			✓	✓	✓	
Monitoring and evaluation of performance	✓	✓				✓	✓							✓	✓	✓
Country-related functional requirements															✓	
Project champion		✓			✓	✓	✓									
Information Technology (IT)	✓							✓		✓	✓			✓	✓	✓
User satisfaction										✓		✓	✓			
Vendor															✓	
Human IT resource													✓			
System Quality										✓						
Information Quality										✓						
Organization size											✓			✓		
Education and Training														✓	✓	
Implementation Approach												✓		✓	✓	

Many of these factors are general IS adoption elements. Nevertheless, these factors in IS adoption will help the researcher to obtain in-depth understanding of various factors issues.

3. Research Methodologies

This research was conducted in Thai listed manufacturing firms, which have adopted and implemented accounting information systems.

3.1 Research methodologies

This study uses a quantitative and qualitative research approach. In order to achieve the research objectives this research comprised two phases:

Phase 1: Detailed and focused literature review;

The first stage involved a detailed and focused literature review, which led to the development of the preliminary research model representing proactive factors influencing accounting information systems adoption success (The prior model from the literature was used together with the pilot case study, in building the research model). The second stage involved verifying the model by pilot case studies in which two large Thai organizations were used to provide useful insights into the nature of factors influencing the adoption and implementation of an accounting information system related to organizational AIS. Regarding final firm selections, these companies were selected as being well-known corporations in the stock exchange of Thailand; they are regarded as powerful and also kindly provide high quality of knowledge and valuable information for higher education providers in terms of education and data collection. Their contribution is acknowledged for the learning purposes of this proposal.

The pilot studies provided a background of prior theory and general directions for the data collection process (Perry, 1998). The pilot case study protocol was used, because it was considered to be of assistance in increasing the reliability of case study research and in guiding the investigator in carrying out the case study (Yin, 1994). Pilot case studies are considered to help the determination and assessment of the reliability and validity of interview questions (Eisenhardt, 1989; Yin, 1994).

Table 2 Exploratory Case studies' interviews details

Source: Developed for this research

Case	Organization Type	Organization Size	Business Nature	Interviewee's Role in the Organization
A	Private	Large	Private national manufactures enterprise.	CEO
				Technician IT
				Data Manager
				Accounting Manager
				Technical Expert
				Programmer
				Director of IT audit division
				Project manager
B	Private	Large	Organization of the conventional paper industry	Acting Director of Finance and Division office
				Accountant
				Programmer
				Project manager
				Director of IT
				Technical Expert
				Programmer
				Director of IT audit division

Stage one used pilot case studies to verify the framework. A total of seventeen exploratory, in-depth interviews were conducted between April 2013 and May 2013. Table 2 summaries the job description of the interviewees. All interviews were approximately one hour's duration. Interviewees were selected based on their expertise in information management and their experience with AIS issues within their organization.

Phase 2: Data collection through multiple case studies-confirmatory stage;

Table 3 Data collection through multiple case studies

Source: Developed for this research

Survey's Role in the Organization	Frequency	Percent
Accounting or Finance	51	27
Technology Information	88	46.6
Audit	43	22.8
Other	7	3.7
Total	189	100

The second stage involved the development of a questionnaire, the distribution of the questionnaire, data gathering, data analysis, and survey report. Data was collected by survey questionnaires mailed to business stakeholders of Thai listed manufacturing firms. Table 3 shows the data roles of the respondents. The population was produced from companies listed on The Stock Exchange of Thailand (SET) database, as of January, 2013 (http://www.set.or.th/th/company/companylist.html). Data was collected by survey questionnaires mailed to business stakeholders of Thai listed manufacturing firms. The population of this research is 120 manufacturing firms in Thailand because these businesses are within a high risk of business operation. With regard to the questionnaire mailing, 82 surveys were undeliverable because some firms were no longer in business or had moved to unknown locations. Deducting the undeliverable from the original 120 mailed, the valid mailing was 38 surveys, from which 189 responses were received. The effective response rate was approximately 37.80%. The response rate for a mail survey, without appropriate follow-up procedure, is greater than 20% is considered acceptable (Aaker, 2001). For general information of respondents, accounting or finance equalled 27% of the returned questionnaires. Technology Information 46.6%, Audit 22.8% and other 3.7%.

3.2 Data Analysis

In this research, data gathered from case studies used qualitative data. The qualitative data analysis methods use pattern-matching, content analysis, and cross-case synthesis. According to Yin (2003), analysis of evidence obtained through investigation should be based on a general analytic strategy such as theoretical propositions or a case description. The case description will assist in organizing case studies on the basis of descriptions of general characteristics and relationships of the phenomenon in question. The developments of the case study methodology are procedures for linking data to propositions and criteria for interpretable findings. The modes of analysis that will be used in this study are described.

In the second phase, survey methodology was used. The completed questionnaires were coded and entered into a software program SPSS (Statistical Package for Social Sciences) for Windows 16.0 for analysis. A range of data analysis methods was employed for the survey data. These included descriptive, paired sample t-tests, as well as one-way ANOVAs and regression analysis.

4. Research Finding

The research framework of this study is illustrated in Figure 2. This research, involving data from the pilot study and the literature, was used to build the preliminary research framework and then involved the development of a questionnaire to confirm the framework, concerning high performance in AIS adoption processes.

Influence factors in AIS adoption framework

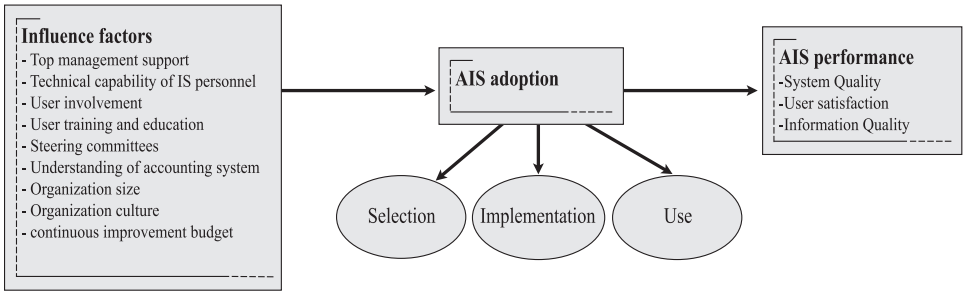

Figure 2 Influencing factors in AIS adoption frameworks

Source: Developed for this research

This research found that there are 9 factors that are significant to managing AIS adoption. They include, top management support, technical capability of IS personnel, user involvement, user training and education, steering committees, organization size, organization culture and two other new factors were suggested from pilot cases such as understanding of accounting system, and continuous improvement budget. The study also identified three AIS performance dimensions; systems quality, user satisfaction and information quality. In order to address each of these factors, it is essential to examine how each may be affected by external and internal organizations, which influence systems within and across corporations, which will be discussed in detail in the next sections.

4.1 Geographical Distribution

Table 4 Geographical distribution of responses

Source: Developed for this research

Industry	Frequency	Percent
Automotive	42	22.2
Machine industry	45	23.8
Paper and Printing	43	22.8
Petrochemicals	38	20.1
Packaging	21	11.1
Total	189	100

The survey covered manufacturing industry firms in Thailand (see Table 4). Some respondents preferred not to identify their location in their responses. Table 4 showed that the majority of responses came from Automotive 42 responses, machine industry 45 responses, paper and printing 43 responses, Petrochemical 38 responses, and packaging 21 responses.

The types of Accounting Information Systems

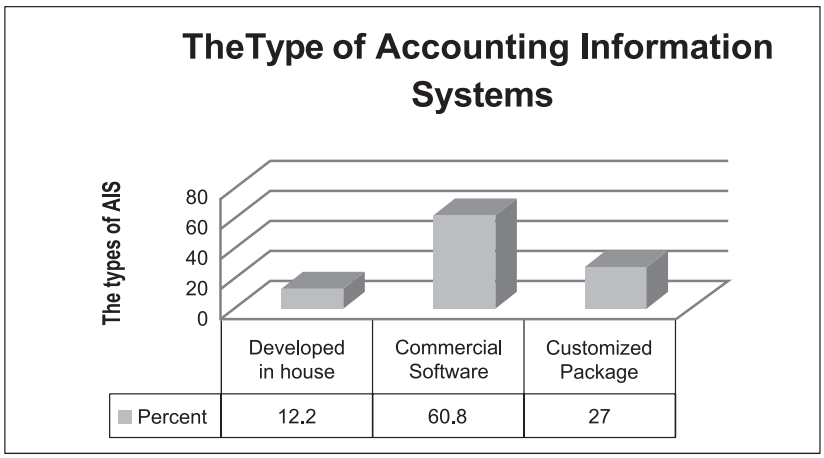

Figure 3 Types of Accounting Information Systems

Source: Developed for this research

4.2 Overall analysis

From Table 5, it can be seen that the general characteristics of industry firms show that gender of most respondents is male (55.6%), age under 30 years old (60.8%), status single (72%), graduated with bachelor's degree or lower (73%), salary between 25,000-35,000 bath (50.8%), job technology and information (46.6%), position Non-management employee (58.2%) work experience between 5-10 years (57.1%).

Table 5 Total assets, Annual Revenue and Full Time Employee numbers

Source: Developed for this research

SEX	**Frequency**	**Percent**
Male	105	55.6
Female	84	44.4
Total	189	100
AGE	**Frequency**	**Percent**
< 30 Years	115	60.8
30-40 Years	48	25.4
41-50 Years	25	13.2
> 50 Years	1	0.5
Total	189	100
STATUS	**Frequency**	**Percent**
Single	136	72
Married	53	28
Total	189	100
GRADUATED	**Frequency**	**Percent**
Bachelor's degree or lower than a Bachelor degree	138	73
Higher than a Bachelor degree	51	27
Total	189	100

Table 5: Total assets, Annual Revenue and Full Time Employee numbers (Cont.)

SALARY	**Frequency**	**Percent**
Less than 25,000	48	25.4
25,000-35,000	96	50.8
35,001-40,000	11	5.8
More than 45,000	34	18
Total	189	100
JOB	**Frequency**	**Percent**
Accounting or Finance	51	27
Technology Information	88	46.6
Audit	43	22.8
Other	7	3.7
Total	189	100
POSITION	**Frequency**	**Percent**
Top Management	2	1.1
Middle Management	77	40.7
Non-management employee	110	58.2
Total	189	100
WORK EXPERIENCE	**Frequency**	**Percent**
< 5 Years	54	28.6
5-10 Years	108	57.1
11-15 Years	27	14.3
Total	189	100

4.3 Most critical factors (MCF) in AIS adoption

Figure 4 shows that summarize ranking order for all respondents. Survey respondents were asked in Section B of the questionnaire to select the top three most critical factors in AIS adoption from the list of 9 factors in Section A. A number of respondents stated in this section that all 9 factors listed in the questionnaire were important; it was difficult for them to select what were the most important factors. This indicated that the list of factors in section A of the questionnaire was seen as appropriate to represent the respondents' real perceptions of critical factors in AIS adoption, which further sanctioned the validity of the questionnaire design.

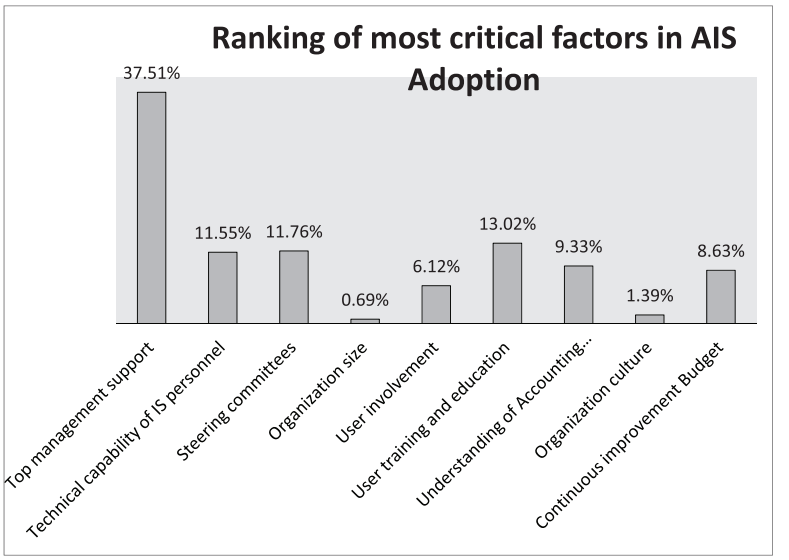

Figure 4 Ranking of most critical factors in Accounting Information System Adopting

Source: Developed for this research

In order to summarize ranking order for all respondents of the most critical factors, a data transformation was conducted by sum the percentage of the 3 most critical factors to develop a new scale that represented the total percentage agreed on the factors, and therefore would be able to determine the summarized rank ordering for most critical factors based on those percentages. Table 6 provided the total percentage agreed for each factor to be one of the most critical factors from section B of the questionnaire, and the ranking order of those factors based on their summed percentage. From Table 6, it can be seen that the top three most critical factors were: 1) Top management support (37.51%); 2) User training and education (13.02%); 3) steering committees (11.76%).

Table 6 Ranking of most critical factors in Accounting Information System Adoption

Source: Developed for this research

Independent Variables	Percentage agree	Ranking of most critical factor
Top management support	37.51	1
Technical capability of IS personnel	11.55	4
Steering committees	11.76	3
Organization size	0.69	9
User involvement	6.12	7
User training and education	13.02	2
Understanding of Accounting Information System	9.33	5
Organization culture	1.39	8
Continuous improvement Budget	8.63	6

The *first* most critical factor, *top management support,* indicates that top management participation is crucial for the success of AIS adoption management and AIS adoption policy. The extent of top management commitment could be considered as a measure of the organizations' commitment to AIS adoption management. *User training and education* was ranked as *second* most critical factor. This research shows that a lack of appropriate education and training can cause serious problems for an organization by having an impact on AIS adoption. An effective education and training program can help to create an empowered workforce that leads to better AIS adoption performance. *Steering committees,* was found as the *third* most critical factor for AIS adoption. The AIS project must receive approval and support from steering committees before it can be implemented. Steering committees must be willing to become involved and to allocate valuable resources to the implementation effort.

4.4 The relationships between influence factors in AIS adoption and system quality

Table 7 presents the results of Pearson correlation analysis of the relationships between influence factors in AIS adoption and system quality. *User involvement and continuous improvement budget* showed statistically significant as system quality at $p = 0.05$ level (Delone & McLean, 2003). All other factors showed no significant influence on system quality.

Table 7 The relationships between influence factors in AIS adoption and system quality

Source: Developed for this research

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 Constant	1.970	0.346		5.702	0.000		
Top management support	-0.061	0.075	-0.079	-0.804	0.423	0.299	3.347
Technical capability of IS	-0.071	0.114	-0.070	-0.619	0.537	0.224	4.455
User involvement	0.132	0.064	0.150	2.044	*0.042	0.528	1.893
User training and education	0.016	0.036	0.030	0.460	0.646	0.687	1.455
Steering committees	0.034	0.054	0.053	0.628	0.531	0.408	2.450
Understanding of Accounting System	0.052	0.072	0.055	0.734	0.464	0.509	1.964
Organization size	-0.018	0.035	-0.028	-0.498	0.619	0.899	1.112
Organization culture	0.036	0.058	0.043	0.627	0.531	0.607	1.649
Continuous improvements Budget	0.482	0.071	0.579	6.771	*0.000	0.391	2.556

a. Dependent Variable: System quality

**Correlation is significant at the 0.05*

4.5 The relationships between influence factors in AIS adoption and user satisfaction

Table 8 The relationships between influence factors in AIS adoption and user satisfaction

Source: Developed for this research

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 Constant	1.656	0.374		4.431	0.000		
Top management support	-0.086	0.082	-0.117	-1.050	0.295	0.299	3.347
Technical capability of IS	0.278	0.124	0.29	2.250	*0.026	0.224	4.455
User involvement	0.112	0.07	0.135	1.610	0.109	0.528	1.893
User training and education	-0.104	0.039	-0.198	-2.684	*0.008	0.687	1.455
Steering committees	-0.008	0.059	-0.014	-0.142	0.888	0.408	2.450
Understanding of Accounting System	0.198	0.077	0.219	2.555	*0.011	0.509	1.964
Organization size	-0.027	0.038	-0.046	-0.714	0.476	0.899	1.112
Organization culture	0.08	0.063	0.099	1.267	0.207	0.607	1.649
Continuous improvements Budget	0.129	0.077	0.164	1.673	*0.096	0.391	2.556

b. Dependent Variable: User satisfaction

**Correlation is significant at the 0.05*

Table 8 presents the results of Pearson correlation analysis of the relationships between influence factors in AIS adoption and user satisfaction. *Technical capability of IS personnel, user training and education, understanding of accounting information system and continuous improvement budget* showed statistically significant as user satisfaction at $p = 0.05$ level (Delone & McLean, 2003; Xu, 2003). All other factors showed no significant influence on user satisfaction.

4.6 The relationships between influence factors in AIS adoption and information quality

Table 9 The relationship between the effective operations of Information quality

Source: Developed for this research

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 Constant	2.353	0.340		6.917	0.000		
Top management support	0.086	0.074	0.119	1.164	0.246	0.299	3.347
Technical capability of IS	-0.054	0.112	-0.056	-0.480	0.632	0.224	4.455
User involvement	0.004	0.063	0.005	0.062	0.951	0.528	1.89
User training and education	-0.072	0.035	-0.137	-2.037	*0.043	0.687	1.455
Steering committees	0.103	0.054	0.167	1.920	0.056	0.408	2.450
Understanding of Accounting System	-0.114	0.070	-0.126	-1.620	0.107	0.509	1.964
Organization size	0.003	0.035	0.004	0.076	0.939	0.899	1.112
Organization culture	0.041	0.057	0.052	0.722	0.471	0.607	1.649
Continuous improvements Budget	0.471	0.070	0.599	6.725	*0.000	0.391	2.556

c. Dependent Variable: Information Quality

**Correlation is significant at the 0.05*

Table 9 presents the results of Pearson correlation analysis of the relationships between influence factors in AIS adoption and information quality. *User training and education and continuous improvement budget* showed statistically significant as information quality at $p = 0.05$ level (Xu, 2003). All other factors showed no significant influence on information quality.

5. Recommendations for further research

There are three recommendations for further research. Firstly, this research provides specific insights into the critical influencing factors that could have the most positive effect on AIS adoption outputs. Management of an organization should be aware of the most important influencing factors in AIS adoption. Moreover, most critical influence factors for high quality AIS adoption have been detailed in this research, which managers can use as a guide for focusing their attention and resource allocation. As AIS adoption is essential to doing business now and in the future, research analyzing the methodology will contribute significantly toward understanding how firms achieve AIS adoption performance and can utilize this guide to gain more accounting information systems successes. This evidence suggests that an adequate understanding of influential factors by management must be discussed in relation to the existing accounting processes in organizations. Also, as a result, the empirical evidence suggests that organizations should understand the importance of influential factors for the selection, implementation and use of software and hardware to support operations, strategic management, and decision making in accounting information systems adoption. This information should be considered in adopting AIS in order to improve its effectiveness.

Secondly, the findings of the research's empirical evidence suggest that organizations should understand appropriate influential factors for AIS adoption and provide assistance for all decision making processes. Additionally, the evidence in this study suggests that influential factors promote AIS adoption process performance. Thirdly, influential factors play a vital role in the process of AIS adoption. This evidence suggests that organizations should obtain knowledge of influencing factors for AIS adoption to improve work performance as well as help organizations to make profits. These recommendations are discussed in the following sections, addressing AIS selection, AIS implementation, and AIS use.

6. Limitations

Limitations of this study used the data collected from multiple case studies to develop an understanding of influential factors in AIS adoption. Data collected from interviews with many more stakeholders, and with different stakeholders, may result in different perspectives of influential factors that impact AIS adoption. This study only included the major stakeholders in AIS: information producers, information auditors, information analysts, information users, and information managers, as the key stakeholders' perspectives of AIS adoption. However, other minor stakeholders' perspectives may also be important, and therefore, further research should be conducted.

Moreover, the results of this study are only drawn from Thai organizations; there might or might not be similar results if a study was conducted in other countries, either within or outside of Asia. Whether or not there are similarities and differences needs to be further investigated. It is acknowledged that cultural differences may impact the results, but these are beyond the scope of this research and those issues could be addressed by further research.

Conclusion

In short, it was clear that the significant relationship between influence factors in AIS adoption and AIS performance evidently indicate the importance of these 9 factors in ensuring AIS adoption performance. Some of the factors were 'new' factors that had been suggested by the pilot and main case studies. There are two factors that have been identified by this research that have not been reported in previous studies: 1) understanding of accounting system, and; 2) continuous improvement budget.

The study found that factors influence and impact successful AIS adoption and related AIS performance. The study also found user involvement and continuous improvement budget factor is significantly correlated to the system quality. Further analyses also found technical capability of IS personnel, user training and education, understanding of accounting information system and continuous improvement budget factors are significantly to the user satisfaction. In addition, user training and education and continuous improvement budget factors are significantly to the information quality.

As a result, the empirical evidence suggests that organizations should understand the importance of influential factors for the selection, implementation and use of software and hardware to support operations, strategic management, and decision making in AIS adoption performance. This information should be considered when adopting AIS in order to improve its effectiveness.

This research has provided an understanding of the importance of critical success factors for management in accounting information systems adoption. That is, management is crucial for the successful implementation of accounting information systems. This research has the potential to lift awareness of this important issue. The critical factors identified by the study can serve practitioners in accounting and IT fields as well as management as a useful guide to management activities, and improvement efforts.

High-level AIS adoption management practice is one of the keys to success for many organizations. Specification of the critical success factors of management in AIS adoption can permit managers to obtain a better understanding of accounting information system adoption management practices. If organizations focus on those critical success factors, they may be able to evaluate the perception of AIS adoption management in their organizations' AIS, and ensure the quality of the accounting information. In addition, they will be able to identify those areas of AIS adoption management where improvements should be made, and improve overall AIS adoption in the future.

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