

# **MANAGEMENT & ACCOUNTING REVIEW**

Volume 19 No. 1  
April 2020

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# Critical Success Factors of Accounting Information Systems (AIS): Empirical Evidence from Malaysian Organizations

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## ABSTRACT

*The role of Information System (IS) has changed and progressed rigorously over the last decade because of its ability to speed up the decision-making process. Effective and efficient management of an organization is usually reflected through the quality of decision made through financial systems like Accounting Information Systems (AIS). AIS is often viewed as medium to enhance the capability and efficiency of business operations. However, previous studies have suggested that the success of AIS often relies on critical success factors. This study aims to examine the critical success factors on the net benefits of AIS. The purpose of this paper is to determine the influence of system quality, service quality, system use and user satisfaction and the interaction of these factors on the AIS net benefits. Based upon the lens of DeLone and McLean's Information System Success Model (2003), this study adopted a quantitative method through an online survey of 150 AIS users at various Malaysian organizations. Data was analysed by using the multiple regression method. The result suggests that system quality and service quality influence system use and user satisfaction which also affect net benefits of AIS. This study extends the existing IS literature especially in identifying the critical success factors on net benefits of AIS. Ultimately, the use of the critical success factors of AIS can raise the level of users' belief in it. From the practitioners' perspective, this study can be useful for organizations when selecting and implementing a system.*

**Keywords:** *Accounting Information Systems (AIS), Critical Success Factors, DeLone and McLean ISSM, Malaysian Organizations.*

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### ARTICLE INFO

#### **Article History:**

*Received: 3 February 2020*

*Accepted: 31 March 2020*

*Available online: 30 April 2020*

## INTRODUCTION

The role of Information Systems (IS) has changed and progressed rigorously over the last decade because of its ability to speed up sound decision making processes. Hence, to positively compete in the present adaptable and complex business environment, different types of information are required for diverse purposes and as such organizations need to focus on various accounting tools to support their operations. The employment of financial tools like Accounting Information Systems (AIS) is viewed as a medium to cater for such purposes. Indeed, empirical evidence suggests that the use of AIS has a positive impact on firm performance (Ahmad & Al-Shield, 2019; Hossain, 2019; Primmest, 2019; Reset & Ibrahim, 2018; Trablusi, 2018; Al-Najjar, 2017; Nwinee, Akpos, Vincent, and Ibinado, 2016). This is due to the ability of AIS to process business data into useful information according to user requirements (Rasit & Ibrahim, 2018). Consistent with Trablusi (2018) who has argued that AIS has a positive and significant influence on cost reduction and is able to enhance the effectiveness of the decision-making process. AIS also has proven to be a medium for the advancement of quality decisions, besides enhancing the capability and efficiency of business operations of organizations (Nwinee, Akpos, Vincent, and Ibinado, 2016).

An Accounting Information System just like any other information system is perceived to play a great role in the management of day to day operations in corporate organizations. Borhan and Bader (2018) defined an Accounting Information System (AIS) as a formal system for identifying, measuring, accumulating, analysing, preparing, interpreting and communicating accounting information about a particular entity to a particular group. The main functions of AIS are recording of events or transactions and generating information for performance evaluation. AIS provides a complete process of gathering and reporting financial transactions (Patel, 2015). A combination of computer-based and information technology resources to track accounting activities also form part of AIS. Poor AIS can impact administrative effectiveness and of consequence, managers would not be able to control the administration (Soudani, 2012).

After the 1997 economic crisis in Malaysia, companies have taken efforts to adopt AIS in order to enhance the capability and efficiency of

their business operations. Due to the tremendous growth of AIS users, the Malaysian government has also allocated various grants and initiatives to facilitate companies that are scarce with resources (Kharuddin, Mohd Ashhari, & Md Nassir, 2010). The Malaysian government has consistently provided support for AIS implementation as a national project and part of the Malaysia Economic Transformation Plan (MAMPU 2011). The Malaysia Public Sector Information and Communication Technology (ICT) Strategic Plan has also outlined the implementation of cloud services to ensure full IS usage and that ICT investments are efficient and effective. With the implementation of Goods and Service Tax (GST), the government has outlined financial assistance and incentives to assist Small Medium Enterprises including the RM150 million purchase of accounting software in 2014 and 2015 (Anwar Zainol & Thai Soon, 2017). Such initiatives indicate that the Malaysian government is serious in assisting companies in increasing their performance and the economy through the deployment of information technology.

In a similar vein, the evaluation of AIS success is multidimensional and is exhibited throughout the various stages via different measurements (Haleem & Kevin 2018; Sirsat & Sirsat, 2016). The most popular and extensive measurement of IS success is the Information System Success Model (ISSM) that was first developed by DeLone and McLean in 1992. However, this model has received several critiques. DeLone and McLean refined their ISSM model in 2003 to include information quality, service quality, system quality, system users' usage, users' satisfaction and net benefits as critical success factors (CSFs) contributing to the success of IS. These additional constructs are important to measure AIS effectiveness.

The commonly cited critical success factors of ISSM comprises of system quality, service quality, system use and user satisfaction. System quality is the desirable characteristic of an IS that focuses on the usability aspects and system performance (Urbach & Müller, 2012). Service quality assists users when facing problems in accessing the net benefits of a system. System use represents the degree and manner in which users utilise the IS (Urbach & Müller, 2012). User satisfaction constitutes the extent to which the IS contributes to the success of different users (Urbach & Müller, 2012). System use and user satisfaction are related to people behaviour reacting to the system. Lower system use and user satisfaction can impact the net benefits of a system.

The issues of critical success factors on IS net benefits have often been raised by previous studies (Pramawati & Aiyanto, 2018; Sirsat & Sirsat, 2016). Thus, organizations must ensure that they are adopting the right AIS that can provide accurate data and information. Examining the critical success factors on AIS effectiveness is important to assist organizations to determine whether AIS investment is worthwhile. In addition, accounting information is an imperative element for most of the financial and managerial decisions which affects an economy. Suitable factors and measurements need to be taken into consideration when evaluating AIS effectiveness (Petter, DeLone, & McLean, 2013). The failure of AIS implementation in organizations can lead to time and cost wastage and consequently, failure to achieve organizational strategic goals (Jaafreh, 2017).

Despite the exhaustive research on IS success, companies are still facing challenges on the need to measure IS success (Jaafreh, 2017). Measuring the possible interactions among the critical success factors in identifying the impact of various factors with one or more AIS dimensions is also needed as suggested by Delone & McLean (2003). This study focuses on the five dimensions of critical success factors on the net benefits of AIS. Emphasis on the net benefits which is still lacking is also considered critical, since net benefits are the most important success measures that enables one to capture the positive and negative impact of e-commerce on customers, suppliers, employees, organizations, markets, economies and even society as a whole. Nonetheless, previous studies have not comprehensively considered the critical success factors that influence AIS effectiveness, especially in the context of a developing country. The relationship between dimensions and how the result can be different in the Asian Region is still underexplored.

Acknowledging the importance of AIS in developing countries like Malaysia, this study employed the Delone and McLeon's (2003) IS success model to develop the conceptual framework. By using the model, the challenges faced in measuring critical success factors in AIS can be minimised if not eliminated. Therefore, the objective this study is to examine the critical success factors influencing AIS net benefits in Malaysian organizations. Specifically, the purpose of this study was to determine the influence of system quality, service quality, system use and user satisfaction and the interaction of these factors on net benefits of AIS.

This study adds value to the existing body of knowledge on the practices on the Critical Success Factor (CSF) of AIS. In a way, this study extends the existing IS literature especially in identifying the critical success factors on net benefits of AIS from the perspective of a developing country. Ultimately, the use of the critical success factors of AIS can raise the level of users' belief in AIS. The study is expected to contribute by identifying the critical success factor of IS to encourage managers to evaluate their systems. Hence, management could prioritise the important factors that highly influence effectiveness of AIS in their organizations.

The remainder of the paper is organized as follows. The next section presents the theoretical foundation and literature review. This is followed by hypotheses development and the research model. Subsequently, the description of the methodology is outlined. The result is presented in the following section. Finally, discussion and conclusion are presented.

## **LITERATURE REVIEW**

Studies on AIS have suggested that adopting AIS, improves financial reporting quality, better decision-making, facilitates financial transaction processes and effective internal control of a company (Sinarasri, 2019; Aggarwal, 2018; Rasit & Ibrahim, 2018; Trabulsi, 2018). According to Aggarwal (2018), the effectiveness of an information system can be described through a number of different perspectives such as the output produced as required, increased productivity, improved performance, and increased control over the decision related to the information that is produced by the AIS. Besides, the implementation of AIS is also proven to have a significant effect on the quality of accounting information produced. Sinarasri (2019) reinforced the importance of using AIS in managing a business operation in a company to support strategic decision-making based on qualified accounting information.

### **Critical Success Factors (CSFs) Dimensions**

Critical success factors (CFSs) of IS comprises of factors that measure IS effectiveness. The most popular model that has been widely accepted for measuring IS was developed by DeLone and McLean (1992; 2003) known

as the IS success model. The model states that information quality, service quality, system quality, system use, user satisfaction and net benefits are critical success factors that contribute to effectiveness of IS (McLean & DeLone, 2016).

**Information quality** refers to the quality of data or information which is the output generated from the system. Information quality needs to be understandable, accurate and support users' target (Madnick, Wang, Lee, & Zhu, 2009). Information quality is the desirable characteristic of system output (Petter et al., 2013). IS researchers have also examined information quality produced by the system, basically in the form of reports. For instance, Gable, Sedera, and Chan (2008) defined ten dimensions of information quality namely, importance, availability, usability, understandability, relevance, format, content accuracy, conciseness, timeliness and uniqueness, while others refer to adequacy, completeness, consistency, precision, reliability, scope and usefulness (Iivari, 2005; Sedera, Gable, & Chan, 2004). The quality attributes also include, timeliness, availability, easy to comprehend, relevance, completeness and security (Yakubu & Dasuki, 2018).

System quality implies the ease of accessing and reliability of the system, having the ability to solve users' problems and is ready to meet users' expectations. It also refers to the ease of adapting to the system (Busra Kutlu, 2015). Quality of IS processing includes software and data components that represent system quality. System quality also measures the extent to which the system is technically sound. DeLone and McLean (2003) reported that system quality is measured by attributes such as ease of use, functionality, reliability, data quality, flexibility, and integration. Gable et al. (2008) measured system quality using attributes such as access, customization, data accuracy, data currency, ease of learning, ease of use, efficiency, flexibility, reliability, sophistication, system accuracy and system features. Yakubu & Dasuki (2018) postulated that system quality includes characteristics such as usability, responsiveness, adaptability and reliability.

Service quality is signified as the quality of services or support provided that users receive from the IS organization and the technical support (Jaafreh, 2017) A study by DeLone and McLean (2003) suggested that service quality is the overall support delivered by the service providers,



and this applies regardless whether the support has been delivered by the IS department, a new organizational unit, or outsourced to an internet service provider. They measured service quality through three attributes namely, assurance, empathy, and responsiveness. Petter et al. (2013) defined five dimensions of service quality namely, assurance, empathy, reliability, responsiveness and tangibles. According Yakubu & Dasuki (2018) service quality encompasses the support rendered by either the developers of the system or a support team such as the IT department. The characteristics of ServQ also include knowledge, empathy, responsiveness and effectiveness of the software support unit Yakubu & Dasuki (2018).

System use is also known as one of the critical success factors for IS effectiveness. System use is different from intention to use as use relates to behaviour while intention to use relates to attitude (Jaafreh, 2017). System use is also referred to users' action towards the operations and learning of IS. The success dimension of system use represents the degree and manner in which the users utilise the IS. Measuring system use is a broad concept that can be considered from several perspectives. In case of voluntary system use, the actual system use may be an appropriate success measure. DeLone and McLean (2003) defined four dimensions of system use in measuring e-commerce success. The four dimensions are nature of use, navigation patterns, number of visits and number of transactions. Petter et al. (2013) and Urbach and Müller (2012) defined the amount of time spent as one of the dimensions in measuring system use.

At the point when there is an IS, previous measurement becomes less useful and successful interaction by the management with the IS can be measured in terms of user satisfaction. User satisfaction depends on how users react or whether their expectations have been met by IS (Busra Kutlu, 2015). Several studies have recommended that user satisfaction can be used to measure IS success (Busra Kutlu, 2015; Jaafreh, 2017). These studies found that user satisfaction is appropriate when an IS being examined. The key issue is as to whose satisfaction is to be measured. For example, Hou (2012) examined the effect of end user computing satisfaction on system usage and end user performance.

Delone and McLean's (2003) IS success model stipulated that system use and user satisfaction are interrelated. That is, system use must exist

before user satisfaction in a procedure sense, but positive involvement with system use would lead to greater user satisfaction in a causal sense. Similarly, increased user satisfaction would lead to intention to use. As a result, interaction between system use and user satisfaction would lead to net benefits.

### **Net Benefits**

Net benefits refer to the perception of diverse stakeholders on an IS. There are four types of stakeholders namely, groups of individuals, individuals, management of organizations and society. In general, the measurement that is essential to one type of stakeholder may be less vital to another type of stakeholder (Seddon, 1997). From the viewpoint of the owners of the system, positive IS affects and strengthens subsequent system use and user satisfaction (Jaafreh, 2017). The lack of positive advantage is likely to lead to a decreased system use and possible discontinuance of the system. The success dimension of net benefits constitutes the extent to which the IS contributes to different stakeholders.

In the nutshell, the critical success factors consist of information quality, system quality, service quality, use, user satisfaction and net benefit. Those factors have been developed by previous researchers like Delone & McLean, (2003), Iivari, (2005) and McGill et al., (2003) in IS success model and the results prove that the success of Information System (IS) is influenced by information quality, system quality, service quality, system use, user satisfaction and net benefits. Overall, Table 1 encapsulates the prior studies on the Critical Factors Dimension and Net Benefits.

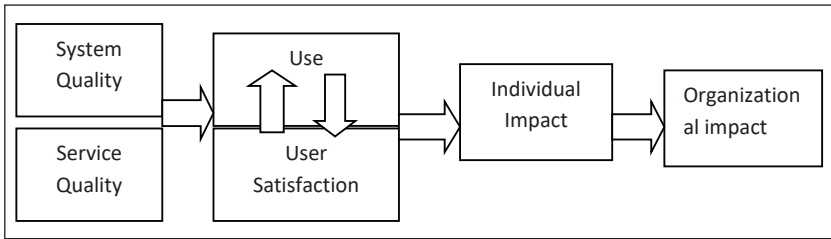
**Table 1: Critical Success Factors (CSFs) Dimensions Included in the Study**

<b>Variables</b>	<b>Discussion</b>	<b>References</b>	<b>Suggested Improvement</b>
System quality	System quality constitutes the desirable characteristics of an IS and, thus, includes measures of the IS itself	Delone and McLean (2003)	System quality is a satisfactory tool for measuring IS services because this variable was used in the early of introduce of IS success model.
Service quality	SERVQUAL is service quality that is most commonly used to measure the service quality of IS, has received some criticism due to different IS need different service.	Tajuddin (2015)	Service quality is a satisfactory tool for measuring the IS services.
Use	Used as a variable that proxies for the benefits from use.	Seddon (1997), Tajuddin (2015)	The use is a factor that improving the performance of individual users of the system application information
User satisfaction	The new construct was explained as follows: "Use must precede 'User Satisfaction' in a process sense, but positive experience with 'Use' will lead to greater 'User Satisfaction' in a causal sense".	Delone and McLean (2003)	The experience of use of IS in this study is voluntary to use the system. This will affect user satisfaction of IS.
Net benefit	The collapsing of individual impact and organizational impact into a more parsimonious net benefits construct.	Wu and Wang (2006)	The net benefits include the individual and organization impact of AIS.

## Theoretical Foundation: DeLone and McLean's IS Success Model

The most popular model for Information Success Model is the DeLone and McLean's IS success model (DeLone & McLean, 1992). Figure 1 depicts the IS success model that has become a standard to justify and specify the measurements for the dependent variable. The IS success model (1992) consists of interrelated dimensions of success which are information quality, system quality, system use, user satisfaction, organizational impacts and individual impacts. The model provides a more comprehensive view of IS success and provides an understanding on the critical success factors for IS.

In 2003, DeLone and McLean reformulated the IS success model. The model also considers the impact of e-commerce (Delone & McLean, 2003). The reformulated IS success model consists of information quality, system quality, service quality, use and intention to use, user satisfaction and net benefits. This updated model includes a service quality measurement as a new dimension to the existing model. The entire group of impact measurements suggested by other studies are grouped into a single impact or benefit category called net benefits. A current meta-study has demonstrated the updated version of the IS success model and has received recognition in the IS community although other studies have suggested that the update model still needs to be further improved (Petter et al., 2013).



**Figure 1: IS Success Model, DeLone & McLean (1992)**

Therefore, the focus of this study was to examine the critical success factors of AIS based on the IS success model. The reformulated IS success model (2003) was used in this study because of the net benefits combining individual impact and organizational impact (Delone & McLean, 2003). Net benefits is an extension to the IS success model contributing to the success of groups, individuals, organizations, industries, and the nation (Jaafreh, 2017). This model was chosen as it is established and widely accepted in the IS literature. For the purpose of this study, information quality is excluded since this study focusses on the system quality and service quality rather than examining the output of the system. This is important since system quality and service quality can ensure that the system adopted could meet user needs.

### **Research Hypotheses**

The research hypotheses in this study was developed to determine the critical success factors of AIS net benefits. As Delone and Mclean (2003) suggested, system use and user satisfaction are closely interrelated. Positive

experience with system use can influence user satisfaction and consequently, influence AIS net benefits. They also assumed that positive or negative AIS net benefits from the stakeholders' perspective can influence subsequent system use and user satisfaction.

### **System quality**

Many studies have measured system quality as perceived ease of use and found positive relationship with various operations of system use in a diversity of systems at the individual level of analysis (Pramesti, 2019; Petter et al., 2013). When the system is in good condition and of high quality, the use of IS can increase. Jaafreh (2017) found that system quality positively impacts system use in the banking sector. Tajuddin (2015) also found a significant relationship between system quality and system use. However, Kutlu (2015) found no relationship between system quality and system use. Therefore, this study develops the first research hypothesis:

**H1:** System quality significantly influences AIS system use in Malaysian organizations.

Prior studies had found that system quality positively impacted user satisfaction (Pramesti, 2019; Jaafreh, 2017; Busra Kutlu, 2015; Wu & Wang, 2006) such as study by Jaafreh (2017) in the banking sector and in Knowledge Management Systems (Wu & Wang, 2006). This is consistent with findings from Pramesti (2019) who examined the effect of AIS system quality towards user satisfaction by using the extended DeLone and McLean ISSM in a Multifinance company. While some had found strong support for the relationship between system quality and user satisfaction, others revealed contradicting results whereby system quality did not affect user satisfaction in the G2C e-Government context (Wang & Liao, 2008). The result indicated that the system is not critical in determining system use. This leads to the second hypothesis.

**H2:** System quality significantly influences user satisfaction of AIS net benefits in Malaysian organizations.

### **Service quality**

Prior studies revealed mix findings on the relationship between service quality and system use (Pramesti, 2019; Jaafreh, 2017; Busra Kutlu, 2015).

Prior studies by Pramesti (2019) and Jaafreh (2017) have found service quality positively influence system usage. Similarly, Tajuddin (2015) found a significant relationship between service quality and system use. In contrast some studies like Busra Kutlu (2015) revealed that service quality is not significant with system use in the banking sector. Similar result is shown in Lee and Yu (2012) who found that service quality did not influence system use in the construction sector. Therefore, the third research hypothesis is developed:

**H3:** Service quality significantly influences the system use of AIS net benefits in Malaysian organization.

Users would be satisfied if the service providers provide support when the system breaks down. Jaafreh (2017) argued that service quality positively impacts user satisfaction in the banking sector. Similarly, Busra Kutlu (2015) postulated that service quality influences user satisfaction on IS. A similar significant relationship between service quality and user satisfaction was also shown in Tajuddin, (2015). Lee and Yu (2012) were of a similar opinion that service quality has a significant positive effect on user satisfaction. In contrast, Stefanovic et al. (2016) in their study on E-Government systems argue that service quality does not influence user satisfaction significantly. This leads to the fourth research hypothesis.

**H4:** Service quality significantly influences user satisfaction of AIS net benefits in Malaysian organizations.

### **System use**

System use relates to a user's action towards the operation and learning of IS. If the user depends on the system, then the user would obtain AIS net benefits. Jaafreh (2017) found that system use positively impacts AIS net benefits in the banking sector. In measuring Knowledge Management System (KMS) success, Wu and Wang (2006) found system use has a significant positive influence on AIS net benefits. In Stefanovic et al. (2016), they found employees in the municipal councils increased their use of the system due to their satisfaction with the e-government system and indirectly, increase the net benefits of AIS. Wang and Liao (2008) also found that system use significantly influenced the net benefits in the e-government system. Another study identified a significant relationship

between system use and AIS net benefits (Tajuddin, 2015). Therefore, the fifth research hypothesis is:

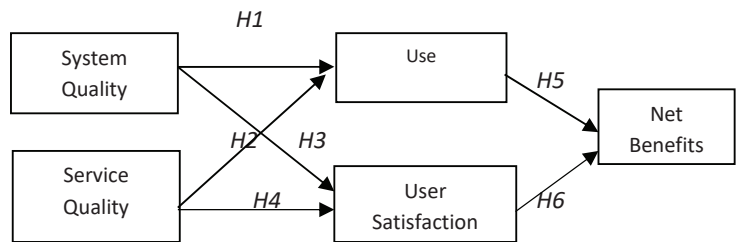
**H5:** System use significantly influences the AIS net benefits in Malaysian organizations.

**User satisfaction**

User satisfaction is a subjective assessment of the different consequences assessed on a pleasant-unpleasant continuum. When the users are satisfied with the system, they would obtain the net benefits. For instance, user satisfaction was shown to have an influence on the net benefits (Pramesti, 2019; Jaafreh, 2017; Tajuddin, 2015). This is supported by Stefanovic et al., (2016) that user satisfaction in an e-government system also had a positive effect on net benefits. Another study revealed a significant relationship between user satisfaction and net benefits (Tajuddin, 2015). Similarly Jaafreh (2017) contended user satisfaction positively impacts AIS net benefits in the banking sector. Therefore, the sixth research hypothesis was developed.

**H6:** User satisfaction significantly influences the AIS net benefits in Malaysian organizations.

To test the above hypotheses, the following research model is proposed (Figure 2).



**Figure 2: Research Model**

## METHODOLOGY

### Data Collection Method and Sampling

This study was conducted in Malaysia. Organizations in Selangor and Melaka were selected as the sample of this study. The Selangor and Melaka IS users were chosen due to logistics and geographical disperse constraint. The unit of analysis is the organization. There is no specific organization involved because the study focussed on the users of AIS only. To select the sample, this study used probability sampling. Specifically, the simple random sampling technique was chosen because it is the simplest and less complex. Roscoe (1975) proposed that the rule of thumb for determining sample size is that larger than 30 and less than 500 are appropriate for determining the sample size. This study sent questionnaires to 150 respondents. Out of the total 150 questionnaires distributed, 110 completed questionnaires were returned, resulting in a response rate of 80%. Ninety questionnaires were distributed in Selangor and 60 were distributed to Melaka. Based on the Krejcie and Morgan (1970) table, the number of the respondents is considered sufficient for data analysis.

### Survey Instruments

This study used a questionnaire survey as the research instrument. The questionnaire consisted of three main sections. Section A pertains to the demographic profile of respondents. The respondents were requested to complete six questions related to demographic profile. Section B of the survey questionnaire evaluated the critical success factor of AIS. The items in this section represent the independent variables used in this study. The questions in Section B were designed to elicit responses to the 13 items related to the variables. There were 19 questions in this section and each question required a response from a 5-point Likert Scale that represented AIS characteristics. Lastly, Section C of the questionnaire was intended to determine the net benefits that organizations derived from the critical success factors of AIS use. Net benefits were represented as the dependent variable. In measuring the influence of the critical success factors on AIS net benefits, a 5-point Likert Scale was used ranging from “strongly disagree” to “strongly agree”. There were 7 items for variables under this section which were adopted from previous studies (DeLone & McLean, 2003).



### Variable Measurement

The questionnaire was designed to include all the variables used in this study (i.e. System Quality, Service Quality, Use, User Satisfaction and Net Benefit). Items measurement for independent variables were adopted from various studies (see Table 2 for detail).

**Table 2: Measurement Items**

Variables	Scale/Items	Item	Instrument by
System Quality	Ease of use	The system has clear spaces to record the data and easy to access	Delone and McLean (2003), Gable et al. (2008)
	Portability	The system grants access to more than one person at the same time	McGill et al. (2003)
	Reliability	Unauthorized persons cannot simply access the system due to high security	Delone and McLean (2003), Gable et al. (2008)
Service Quality	Follow-up service	I am satisfied with the availability of the user guides and help functions provided by system	Liu and Arnett (2000)
	Reliability	I am confident to perform any transaction with the help from the IT support service team I am satisfied with the up-to-date hardware and software available while using the system Login is easy in the system	Bossen, Jensen, and Udsen (2013), Wang and Liao (2008)
	Responsiveness	I am satisfied with the prompt service from the service provider	Chang and King (2005), Delone and McLean (2003)
Use	Daily user	I am really dependent on the system to perform my work	Almutairi and Subramanian (2005), Bossen et al. (2013)
	Frequency of use	The frequency of system usage is considerably high	Almutairi and Subramanian (2005), livari (2005)
	Intention to use	The productivity of my job has increased significantly by using the system	Davis et al. (1989),

User Satisfaction	Efficiency	The system has an efficient performance	Wu and Wang (2006), Wang and Liao (2008)
	Effectiveness	The system has an effective performance	Almutairi and Subramanian (2005)
	Information satisfaction	The system is able to generate the information that I need for my respective area The system is able to meet user expectation	Gable et al. (2008)
	System satisfaction	I am very satisfied with the system	Almutairi and Subramanian (2005), Gable et al. (2008)
Net Benefits	Job simplification	The system makes my job easier	Davis et al. (1989), Wang and Liao (2008)
	Time saving	The system saves my time	Wang and Liao (2008)
	Task innovation	The system has changed my job significantly The system helps to acquire new knowledge and innovative ideas	Torkzadeh and Doll (1999), Wu and Wang (2006)
	Decision effectiveness	The system helps to effectively manage and store knowledge The system helps the end user make fast decisions	Gable et al. (2008), Wang and Liao (2008)
	Task performance	The system improves the quality of my work life The system enhanced my performance on the job	Davis et al. (1989), Wang and Liao (2008)
	Enhances Communication	The system enhanced communication between management and user	Almutairi and Subramanian (2005), Wang and Liao (2008)
	Overall Success	Overall the system has been running successfully	Almutairi and Subramanian (2005), Wang and Liao (2008)

The data in this study was recorded and analysed using the Statistical Package for Social Sciences (SPSS) software and also Microsoft Excel. Descriptive analysis was carried out on the critical success factors on the net benefits of AIS. Hypotheses were analysed using the correlation and multiple regressions in order to examine the influence of system quality, service quality, system use, and user satisfaction to the net benefit of AIS.

## RESULTS

### Demographic Profile of Respondent

One hundred and fifty questionnaires were distributed to IS users in Selangor and Melaka. Out of the total 150 questionnaires distributed, 110 completed questionnaires were returned, resulting in a response rate of 80%. Ninety questionnaires were distributed to Selangor and 60 surveys were distributed to Melaka. The profile of 110 respondents were analysed based on their gender, educational level, current job position, number of years working in the organization and number of years in current position. Details of the profiles are depicted in Table 3.

**Table 3: Demographic Profile of Respondents**

Demographic variable		Frequency	Percentage
Gender	Male	68	61.8%
	Female	42	38.2%
Age (years)	21 - 30 years	72	65.5%
	31 - 40 years	28	25.4%
	41 - 50 years	7	6.4%
	51 and above	3	2.7%
Number of years working in the organization	1-5 years	70	63.6%
	6-10 years	30	27.3%
	11-15 years	6	5.5%
	>15 years	4	3.6%
	Accountant	56	50.9%
Respondents' Job Position	Audit associates	15	13.6%
	Senior audit	12	10.9%
	Executive	7	6.4%
	Manager	9	8.2%
	Assistant manager	4	3.6%
	Tax senior	5	4.5%
	Company secretary	2	1.8%
Respondents' Type of AIS/IS Used	UBS accounting	42	38.2%
	MYOB accounting	29	26.4%
	Mybis Accounting	5	4.5%
	CCH ProSystem	11	10.0%
	SAP accounting	6	5.5%
	Others	17	15.5%

## Descriptive Analysis

The overall mean score of system quality was 3.77 with a standard deviation of 0.91, indicating that users enjoyed the unique functionalities of AIS. For service quality with a mean score of 3.80 and a standard deviation of 0.8, showed that the AIS users have easy access towards the system. Moreover, system use mean score of 3.95, with a standard deviation of 0.841 suggests that the AIS provides better support to the job procedures. User satisfaction mean score of 3.83 with a standard deviation of 0.82 implies that users can generate the required information through the AIS. A mean score of 3.94 for net benefit with a standard deviation of 0.84 shows that implementing AIS, makes the users’ job easier (see Table 4).

**Table 4: Result of Construct Assessment  
(Mean Score and Standard Deviation)**

	<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Cronbach Alpha</b>	<b>Skewness</b>
1	System quality	3.77	0.91	0.896	-0.59
2	Service quality	3.80	0.81	0.914	-0.85
3	System Use	3.95	0.84	0.935	-0.95
4	User satisfaction	3.83	0.82	0.946	-1.03
5	Net benefits	3.94	0.84	0.967	-1.09
N= 110					

All 110 samples were assessed for the normality of data based on the completed questionnaires. The result showed that the Skewness and Kurtosis values ranged between 2 and -2. The Skewness of each variable was -.59, -.85, -.95, -1.03 and -1.09. The Kurtosis value for each variable also ranged between 2 and -2 which are stated in 1.08, 2.04, 1.79, 2.14 and 2.03. Thus, according to George and Mallery (2003), this data is considered normal as it falls within the range of  $\pm 2$  and -2. See detail in Table 4.

## Validity Test

A validity test was conducted for the items related to the variables in this study. The critical value of factor loading for the rotated factor matrix was set at 0.5. Any item that scored less than 0.5 were considered not important. Based on this, all items were above the acceptance value of 0.5.

## Reliability Test

A reliability test was conducted using the Cronbach alpha values. The Cronbach alpha values for the constructs were; 0,896 for system quality; 0.914 for service quality; 0.935 for system use; 0.946 for user satisfaction and 0.967 for net benefit. So all the Cronbach alpha values were above 0.7 which is considered acceptable reliability values (Pallant, 2013). The composite reliability values ranged between 0.896 to 0.967 which showed an above excellent level (George & Mallery, 2003).

## Correlation Analysis

Table 5 indicates the correlation between all the main variables in this study. Two variables with a bivariate correlation of 0.9 or more in the same analysis should not be included (Pallant, 2013). The other values among the independent variables were not too high and not exceeding 0.9. The results show that the correlation value was between 0.778 and 0.865 thus, indicating a positive correlation between the variables and were statistically significant. This result indicates that all variables can be retained as no multicollinearity issues existed. Therefore, further analyses for testing the research hypotheses were conducted using the multiple regression analysis.

**Table 5: Correlation Matrix**

Variables	System quality	Service quality	User satisfaction	System Use	Net benefit
System quality	1				
Service quality	.821**	1			
System Use	.778**	.865**	1		
User satisfaction	.807**	.813**	.863**	1	
Net benefits	.788**	.799**	.847**	.855**	1

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

1. For system quality, the correlation showed a strong positive relationship (*0.821*), (*0.778*), (*0.807*) and (*0.788*) with service quality, user satisfaction, system use and perceived net benefits respectively (Pramesti, 2019; Yakubu & Dasuki, 2018; Jaafreh, 2017; Lee & Yu, 2012; Sirsat & Sirsat, 2016).

2. For service quality, the correlation showed a strong positive relationship (0.821), (0.865), (0.813) and (0.799) with system quality, user satisfaction, system use and perceived net benefits respectively (Pramesti, 2019; Yakubu & Dasuki, 2018; Jaafreh, 2017; Lee & Yu, 2012; Sirsat & Sirsat, 2016).
3. For user satisfaction, the correlation showed a strong positive relationship (0.778), (0.865), (0.863) and (0.847) with system quality, service quality, system use and perceived net benefits respectively (Pramesti, 2019; Jaafreh, 2017; Lee & Yu, 2012; Sirsat & Sirsat, 2016).
4. For system use, the correlation showed a strong positive relationship (0.807), (0.813), (0.863) and (0.855) with the system quality, service quality, user satisfaction and perceived net benefits respectively (Pramesti, 2019; Jaafreh, 2017; Lee & Yu, 2012; Sirsat & Sirsat, 2016).
5. For perceived net benefits, the correlation showed a strong positive relationship (0.79), (0.80), (0.85) and (0.85) with the system quality, service quality, user satisfaction and system use respectively (Pramesti, 2019; Jaafreh, 2017; Lee & Yu, 2012; Sirsat & Sirsat, 2016).

### Regression Analysis

**Multiple regression analysis of the relationship between system quality and service quality with system use of AIS in Malaysian organizations (Model 1).**

**Table 6: Model's results and values (Model 1)**

System Use	Net benefit
R Square	0.720
F-Value	137.777
P-Value	0.000

To evaluate the hypothesis, a multiple regression analysis was conducted to determine whether there was any significant effect of Service Quality and System Quality on System Use of the AIS. The R squared value was 0.720. This explains 72% of the variation in the response variable (Use of the AIS in Malaysian Organizations) can be explained with the predictor

(System Quality and Service Quality). The p-value was 0.005 which was less than significance value (0.05) indicating that the model is significant.

Hence, the multiple linear regression equation for Model 1 is shown below:

$$\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_1 \hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \hat{\beta}_2 x_2 \hat{\beta}_2 x_2$$

Where:

Y = Use of the AIS in Malaysian Organizations

$x_1$  = System Quality

$x_2$  = Service Quality

Based on the sig. value in Table 7 both variables were significant to System Use of the AIS in Malaysian Organizations since the significance value was less than 0.05.

**Table 7: The coefficients values of the Model 1**

	B	Std. Error	Beta	t-statistic	Sig
(Constant)	1.423	.885		1.608	.111
System Quality	.295	.062	.426	4.754	.000
Service Quality	.405	.078	.463	5.168	.000

Multiple regression analysis of the relationship between system quality and service quality with user satisfaction (Model 2)

**Table 8: Model's results and values (Model 2)**

System Use	Net benefit
R Square	0.873
F-Value	171.031
P-Value	0.000

To evaluate the hypothesis, a multiple regression analysis was conducted to determine whether there was any significant effect of Service Quality and System Quality on User satisfaction. The R squared value was 0.873. This explains 87.3% of the variation in User Satisfaction can

be explained with the predictor (System Quality and Service Quality). The p-value was 0.005 which was less than the significance value (0.05) indicating that the model is significant.

The multiple linear regression equation for Model 2 is shown below:  

$$(y_i) \hat{=} (\beta_0) \hat{+} (\beta_1) \hat{x}_1 + (\beta_2) \hat{x}_2$$

Where:

Y = User Satisfaction

x<sub>(1)</sub> = System Quality

x<sub>(2)</sub> = Service Quality

**Table 9: The coefficients values of the Model 2**

	B	Std. Error	Beta	t-statistic	Sig
(Constant)	1.228	.990		1.241	.217
System Quality	.175	.070	.208	2.515	.013
Service Quality	.736	.088	.694	8.387	.000

Based on the sig. value in Table 9, both variables were significant to the User Satisfaction since the significance value was less than 0.05. This is similar with reference to those of Tajuddin (2015) and Jimmy (2014), who showed that IS quality, which includes system quality, information quality, and service quality, positively impacts user satisfaction.

**Multiple regression analysis of the relationship between system use of the AIS and user satisfaction with net benefits (Model 3)**

**Table 10: Model's results and values (Model 3)**

System Use	Net benefit
R Square	0.778
F-Value	187.571
P-Value	0.000

To evaluate the hypothesis, a multiple regression analysis was conducted to determine whether there was any significant effect of System Use of the AIS in Malaysian Organizations and User Satisfaction on the Net Benefits. The R squared value was 0.778. This explains 77.8% of the



variation in Net Benefits can be explained with the predictor. The p-value was 0.005 which is less than the significance value (0.05) indicating that the model is significant.

The multiple linear regression equation for Model 3 is shown below:

$$\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_1 \hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \hat{\beta}_2 x_2 \hat{\beta}_2 x_2$$

Where:

Y = Net Benefits

$x_1$  = Use of the Accounting Information System

$x_2$  = User Satisfaction

**Table 11: The coefficients values of the Model 3**

	B	Std. Error	Beta	t-statistic	Sig
(Constant)	4.860	1.820		2.671	.009
Use	1.161	.216	.485	5.378	.000
User Satisfaction	.847	.178	.429	4.761	.000

Based on the sig. value in Table 11, both variables were significant to the Net Benefits since the significance value is less than 0.05. All of the hypotheses proposed have influence and are significant, and the results confirm the main goals of this study. These results are consistent with the prior literature and provides empirical support for the existence of a positive relationship between the dimensions of the IS success model.

## Hypotheses Testing

All of the hypotheses proposed have influence and are significant, and the results confirm the main goals of this study. These results are consistent with the prior literature and provide empirical support for the existence of a positive relationship between the dimensions of IS success model. Hypotheses for this study were analysed using multiple regression analysis. A summary result is presented in the Table 12 below:

**Table 12: The coefficients values of the Model 3**

No	IV	Hypotheses	Findings
H1	System quality	System quality significantly influences system use of AIS in Malaysian organizations	There is a significant positive relationship between system quality and system use of AIS
H2	System quality	System quality significantly influences user satisfaction of AIS in Malaysian organizations	There is a significant positive relationship between system quality and user satisfaction of the AIS
H3	Service quality	Service quality significantly influences system use of AIS in Malaysian organizations	There is a significant positive relationship between service quality and system use of the AIS
H4	Service quality	Service quality significantly influences user satisfaction of AIS in Malaysian organizations	There is a significant positive relationship between service quality and user satisfaction of the AIS
H5	Use	System use significantly influences the AIS net benefits in Malaysian organizations	There is a significant positive relationship between system use and AIS net benefits.
H6	User satisfaction	User satisfaction significantly influences the AIS net benefits in Malaysian organizations	There is a significant positive relationship between user satisfaction and AIS net benefits

## DISCUSSION

The first objective of this study was to examine the influence of system quality on system use of AIS net benefits in Malaysian organizations. The results support the findings in previous studies that showed a significant positive relationship between system quality and system use of AIS. The descriptive analysis on system quality shows that system quality influences system uses of AIS. The regression indicates that system quality significantly influences system use of AIS. This finding supports the findings in Pramesti (2019); Yakubu & Dasuki (2018); Jaafreh (2017); Tajuddin (2015); Jimmy

(2014); Petter et al. (2013); Petter, DeLone, and McLean (2008). The second objective of this study was to examine the influence of system quality on user satisfaction of AIS net benefits in the Malaysian organizations. This study shows a significant positive relationship between system quality and user satisfaction of AIS. The descriptive analysis on system quality shows that system quality influences user satisfaction of AIS. The regression analysis indicates that system quality significantly influences user satisfaction of AIS. The finding supports the findings in Pramesti (2019); Jaafreh (2017); Tajuddin (2015); Busra Kutlu (2015); Jimmy (2014); Petter et al. (2013); Petter, DeLone, and McLean (2008).

The third objective of this study was to examine the influence of service quality on system use of AIS net benefits in Malaysian organizations. The result shows a significant positive relationship between service quality and system use of AIS. The descriptive analysis on service quality shows that service quality influences system uses of AIS. The regression analysis indicates that service quality significantly influences system use of AIS. This finding supports the findings shown in Primmest (2019); Jakub & Vasuki (2018); Jaffrey (2017); Taj Uddin (2015); Bursa Cult (2015); Jimmy (2014); Peter et al. (2013); Peter, DeLong, and McLean (2008).

The fourth objective of this study was to examine the influence of service quality on user satisfaction of AIS net benefits in Malaysian organizations. The results show a significant positive relationship between service quality and user satisfaction of AIS. The descriptive analysis on service quality shows that service quality influences user satisfaction of AIS. The regression analysis indicates that service quality significantly influences user satisfaction of AIS. This finding supports the findings shown in Jaffrey (2017); Taj Uddin (2015); Bursa Cult (2015); Jimmy (2014); Peter et al. (2013); Peter, DeLong, and McLean (2008).

The fifth objective of the study was to examine the influence of system use on AIS net benefits in Malaysian organizations. The result shows a significant positive relationship between system use and AIS net benefits. The descriptive analysis shows that system use influences AIS net benefits. The regression analysis indicates that system use significantly influences AIS net benefits. This finding supports the findings in Primmest (2019); Jaffrey (2017); Peter et al. (2013) and Peter et al. (2008).

The last objective of the study was to examine the influence of user satisfaction on AIS net benefits in Malaysian organizations. The result shows a significant positive relationship between user satisfaction and AIS net benefits. The descriptive analysis also shows that user satisfaction influences AIS net benefits. The regression analysis indicates that user satisfaction significantly influences AIS net benefits. This finding supports the findings in Primmest (2019); Jaffrey (2017); Peter et al. (2013) and Peter et al. (2008) and where user satisfaction influences AIS net benefits. Overall, the results of this study provide evidence on the influence of the critical success factors of AIS.

## CONCLUSION

Based on the results all research hypotheses were supported. This indicates that the influence of the critical success factors on AIS in Malaysian organizations is significant. In sum, the result of this study shows the influence of the critical success factors on AIS net benefits. Specifically, the critical success factors are information quality, system quality, service quality, system use, user satisfaction and perceived net benefits. The finding in this study shows system quality has a lower frequency with user satisfaction due to the respondents not being satisfied with the system quality. System quality also has a lower frequency with perceived net benefits because respondents were not satisfied with the net benefits of the AIS. The result of the regression analysis shows that the critical success factors of AIS are significant towards each other.

From an academic perspective, this study improves the DeLone and McLeon's IS success model. Using this model, the challenges faced in measuring critical success factors in AIS can be overcome. This study extends the existing IS literature especially in identifying the critical success factors on AIS net benefits. Ultimately, the use of the critical success factors of AIS can raise the level of users' belief in AIS. From a practitioner's perspective, this study can be useful for organizations when selecting and implementing a system. An effective AIS can assist a company to achieve better organizational performance. This study assists practitioners to identify the factors that highly influence AIS effectiveness.

This study is not without limitations. For example, the number of variables used in the IS success model. Information quality was excluded as a variable since the focus of this study was to determine the influence of system quality on system use and user satisfaction of the AIS in Malaysian organizations. This study also includes examining whether other studies have found problems in using service quality as one of critical success factors. Besides, the low response rate was due to the data collection period clashing with the conversion months for companies in the Malaysian Budget 2018. This caused the number of the returned surveys to be less than 150. Hence, the respondents in this study may not fully portray the population of AIS users in Selangor and Melaka and thus, the findings in this study may not be generalizable. Another reason could be due to geographical and the random sampling method in distributing the questionnaires.

This study suggests that more research in the evaluation of the IS model in AIS to be conducted. Future studies can also cover information quality which was not being covered in this study. This study only examined system quality, service quality, system use, user satisfaction and net benefits. It would be beneficial to determine if IS dimensions can influence system use or user satisfaction in future studies. There is also a need for future studies to carry out similar studies on AIS over a longer period of time as the findings in this study may not be conclusive.

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