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The impact of information technology on accounting systems towards SME performance in Malaysia

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ABSTRACT

This study seeks to investigate the impact of accounting information systems on the performance of small and medium-sized enterprises (SMEs) in Malaysia. SMEs were the focus of this study due to their importance to the economy. The features of an accounting system, namely accuracy, efficiency, reliability, data quality, and ease of use, were tested against the performance of a sample of SMEs that implemented an Accounting Information System (AIS) in their companies. A closed-ended questionnaire consisting of a five-point Likert scale was used to gather the data. Convenience sampling was utilized to collect data from a sample size of 112 respondents using questionnaires distributed via online platforms, including social media, messaging applications, and email. The findings revealed that only three features of an accounting information system were positively related to the performance of SMEs in Malaysia, namely accuracy, reliability, and ease of use. Therefore, an accounting system must generate accurate, reliable, and easy-to-use data to assist management in making informed decisions. Companies need to provide internal and external training for accountants and decision-makers and give organizational culture the attention it deserves as it impacts accounting data quality. This training should aim to promote a strong work ethic and a culture of excellence.

Contribution/Originality: This study expands on prior studies on AIS and SMEs in Malaysia by concentrating on SMEs across the country, as opposed to previous studies that solely focused on certain regions. Furthermore, this study concentrated on the characteristics of an AIS.

1. INTRODUCTION

An automated data system, also known as an accounting information system (AIS), is a computerized system designed to process financial data in order to enhance the process of decision-making (Sajady, Dastgir, & Hashem Nejad, 2008). To obtain higher-quality data from the accounting information system, the company should focus on its information technology strategy in conjunction with its set-up tactics, which serve to assess high-quality information that will assist the company in conducting business activities and making rational business decisions (Mamić & Oluić, 2013). Good firm performance can be achieved through the use of accounting data systems that enhance speed, precision, and reliability, as well as through the maintenance of high standards of corporate governance (Teru, 2015). In the past, research has been undertaken on the relationship between a company's performance and the alignment of its accounting data systems. However, the effect of accounting data systems on

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business success is not yet fully understood (Ismail, 2002).

Boyns and Edwards (1997) estimated that by the turn of the twenty-first century, all businesses would benefit from utilizing accounting data systems. The development of basic accounting data system software and hardware began in the 1940s. In the 1950s, the capacity for storing and processing information increased steadily due to the development of computer technology (Rashid et al., 2002). The ability of computer technology to process vast amounts of data and deliver accurate and timely outcomes has resulted in a rise in information utilization. Several data systems, such as the Accounting Information System (AIS), the Manufacturing Resource Planning System (MRPS), and the Human Resource System (HRS), have emerged from the unique properties of computers. The emergence of information system technology has altered how firms are managed (Elliott, 1992).

Revolutions in computer technology have had a profound effect on the operations and processes of several businesses, most notably in the accounting procedures (Ismail, Abdullah, & Tayib, 2003). The difficulties businesses encountered when using the conventional accounting method prompted the adoption, establishment, and development of an accounting data system in Malaysia. According to the study by Ismail et al. (2003), the adoption of accounting systems among Malaysian SMEs was still in its infancy, and the majority of these businesses maintained only basic accounting systems. However, nowadays, the level of computer literacy and usage among Malaysians has improved, and the nation's educational performance has made significant strides forward. Based on Al-Okaily, Al-Okaily, Shiyyab, and Masadah (2020), the accounting system is one of the most widely utilized business systems because it offers uniformity, accurate financial information, and support to the company's stakeholders in making sound business choices.

In today's complex business environment, SMEs face a range of difficulties, making it difficult for them to survive and continue operations. Due to the fast changes in the economy and the rise of globalization, many locally held firms have been unable to manage their operations effectively. Many small firms fail to survive their first five years of operation. This is because firms are confronted with never-before-seen challenges and demands, such as poor economic conditions and competition, globalization, and a continuously changing and pressurizing environment (Al-Okaily et al., 2020). Due to globalization, SMEs are more susceptible to the continuing changes and competitive environment, which require them to successfully compete to grow (Kamaluddin, Arshad, Akmal Hasan, & Abu Samah, 2016). Moreover, businesses in the present day without a doubt need to measure and analyze the benefits and costs of information systems (IS) to justify investment and the IS's contribution to the organization's competitiveness, quality, and productivity (Al-Okaily et al., 2020). Because "profitability" is one of the fundamental objectives of a business, SMEs are under a great deal of pressure to ensure that their accounting and financial operations are handled properly to maintain and monitor their operations (Ibrahim, Ali, & Besar, 2020). Therefore, Hla and Teru (2015) argue that accounting information systems are crucial for businesses. Accounting information systems enhance administration decision-making, the accuracy of monetary reporting, internal controls, and firm transactions. A good AIS will ensure that appropriate, pertinent, and correct information is accessible to all levels of administration, allowing them to plan and govern company operations. Sam, Hoshino, and Tahir (2012) did a study on the prevalence of digital accounting systems in Melaka's small and medium-sized enterprises. Chong and Nizam (2018), on the other hand, examined the impact of accounting software on the performance of Malaysian firms. This study aims to examine the impact of the features of an accounting system on the performance of SMEs in Malaysia.

2. LITERATURE REVIEW

2.1. Accounting System

The accounting system is composed of paperwork, reports, and processes used to promptly generate and send financial data to assist in economic decision-making (Sharkasi, 2011). The development of accounting software represented a significant breakthrough in the field of accounting, enabling businesses to improve the speed and accuracy of financial data generation while also reducing expenses associated with paper-based tasks (Sadighi, 2014).

A high-quality accounting system should support an organization's goals by using a generally robust, reliable, typically cost-effective, and efficient data system or management technique to support the dynamic system. Due to the general trend towards rapidly expanding and thriving technological advancements, manual accounting processes are becoming increasingly obsolete (Amoako, Marfo, Gyabaah, & Gyamfi, 2014).

2.2. The Efficiency of the Accounting System

Organizations strive to improve their performance and increase shareholder value. In the business context, "efficiency" means maximizing value while minimizing the work invested and expenditures incurred to generate greater returns and ultimately increase profit. Companies should aim to enhance the credibility and effectiveness of their accounting systems, ensuring a logical structure that can adapt to company growth and the preferences of stakeholders (Yu & Zhang, 2020). Information technology developments have reduced the time required for managing financial data, resulting in improved time management, increased efficiency, and better data quality (Amviko, 2011).

2.3. Reliability of the Accounting System

The reliability and dependability of accounting data refer to the accuracy and lack of bias in financial information for decision-making (Breen, Sciulli, & Calvert, 2003). The use of block chain technology improves the clarity, consistency, and dependability of accounting data, enhancing its overall quality (Yoon, 2020).

2.4. Ease of Use of the Accounting System

The term "perceived ease of use" refers to a user's perception that a system is effortless to use and easy to learn and implement. This can be illustrated through accounting software that is readily understandable (Davis, 1989). Previous research has demonstrated that the user-friendliness of an accounting system significantly impacts its adoption and use by consumers (Ahmi, Elbardan, & Ali, 2019). Incorporating a user-friendly and practical component of information technology would be beneficial for many businesses. Therefore, the company's performance was previously linked to the system's usability, which included how easy it was to interpret financial data (Gorton, 1999).

2.5. Data Quality of the Accounting System

The significance of accounting data quality cannot be understated, as inadequate data quality can lead to incorrect data analysis. Scholars in the past have gauged the quality of accounting data based on four key criteria: reliability, sufficiency, accuracy, and clarity. According to Guitierrez, Lim, Ong, and Yu (2011), the implementation of computerized accounting systems has produced number of advantages, including greater precision in the delivery of reports to the shareholders and external stakeholders.

2.6. Accuracy of the Accounting System

According to Ghasemi, Shafeiepour, Aslani, and Barvayeh (2011), internal control and balance procedures are prevalent in most computerized accounting systems today. Restricting the number of personnel accountable for financial data accounting is another approach to enhancing accuracy. Efficient application of information technology can help organizations optimize internal operations, save resources, enhance customer service, and achieve better performance levels (Ravichandran & Rai, 2000). How accurately the material depicts actual objects and events in the real world is a measure of accuracy. In monetary information, accuracy is crucial because it should not only increase understanding of the organization but also aid in resolving any problems it may be facing (Alsufy, 2019).

3. HYPOTHESIS DEVELOPMENT

3.1. Technology Acceptance Model (TAM)

Due to its simplicity and ease of use, Davis's (1989) TAM model is one of the paradigms used most frequently in information technology research. The two main components of the TAM model are efficiency and ease, which assess how users perceive how simple it is to deploy a certain technology. Efficiency measures how much organizations believe using a particular system increases their effectiveness. The TAM model is based on the Theory of Reasoned Action model by Fishbein, Ajzen, and McArdle (1980), which suggests that a person's responses and perceptions influence their attitude and behavior towards something. Based on their research, Mcmahon (2001) concluded that the usability of an accounting data system, its efficiency, and the rationale behind its development are significantly interrelated.

3.2. Data Processing Theory

It involves the analysis and translation of a cluster of events that occur in the human brain soonafter the receipt of new information. The philosophy of data management is a strategy for tackling the endeavour of working on human awareness. It is a technique for working with the human consciousness. The framework for the discipline of data handling theory was created by Miller's (1956) inquiry into the administration of data by people using computer models. In addition, he noted that the essential nature of learning is a change in the way data ishandled and processed. Following the idea of data handling presented here, a model of organizational culture is portrayed that illustrates how both productive and wasteful center capacities may be formed (Muhindo, Mzuza, & Zhou, 2014).

3.3. Hypothesis

Grande, Estébanez, and Colomina (2011) examined the impact of Accounting Information Systems (AIS) on performance measures among SMEs in Spain and found a positive correlation between the use of AIS and performance. Al-Hattami and Kabra (2022) highlight the importance for SMEs to recognize that AIS can enhance management control effectiveness, and their research showed a positive relationship between AIS and management control effectiveness (MCE), one of the areas necessary for their survival and success. In Malaysia, two notable studies have been conducted by Kharuddin, Ashhari, and Nassir (2010) and Ismail and King (2007). Ismail and King (2007) collected data from 214 firms through a mail-in questionnaire approach and found that AIS alignment was only high in a few companies. They also discovered that AIS alignment was related to the company's IT maturity, the degree of owner/accounting management and IT understanding, the usage of competence from government institutions and accounting firms, and the presence of internal IT personnel.

3.4. Accuracy and SME Performance

Computers play a crucial role in collecting data and converting it into relevant information to aid in making informed decisions. The accuracy of accounting software is crucial for companies, as it offers advantages in delivering precise and timely information for enhanced decision-making, discovering potential future enterprise avenues, and launching lucrative initiatives. Due to the reliance on information technology and the potential losses associated with erroneous information, it is essential for management to deliberately enhance the quality of the information system (Ravichandran & Rai, 2000).

Using accounting software has several benefits that can enhance the accuracy of accounting records. The software can reduce the likelihood of human errors in data entry and calculations, leading to more reliable financial information. Additionally, accounting software can generate comprehensive and precise reports quickly, which can be utilized for decision-making and improving company efficiency. The accuracy of financial data is essential for achieving a company's objectives and improving its financial and operational performance. Therefore, investing in accounting software can provide significant advantages to a company.

H₁: Accuracy has a significant positive impact on company performance.

3.5. Efficiency and SME Performance

Efficiency is a key factor in achieving financial performance and maximizing shareholders' wealth, and organizations strive to achieve it by reducing resource utilization while maximizing output. According to Wilkinson, Cerullo, Raval, and Wong-On-Wing (2000), an effective accounting information system should be capable of collecting and storing data, administering accounting knowledge and systems, managing data, and generating information at the lowest cost possible. According to Greene and Segal's (2004) research, greater efficiency in insurance sector increased return on equity-based profitability.

H₂: Efficiency has a significant positive impact on company performance.

3.6. Data Quality and SME Performance

AIS outputs largely depend on data quality since poor data quality can result in "garbage in" and "garbage out" (Xu, 2003). Precision, timeliness, completeness, and consistency are the four characteristics that Xu (2003) claims determine the data quality of AIS. Therefore, data quality affects a company's success. To achieve data quality, the data production process, including data collection, exploitation, and storage, must be performed well. Data quality is closely related to the effort put into making decisions (Wixom & Watson, 2001). In the present information era, it is essential to take a proactive stance in managing data quality to improve the institution's reliance on AIS to achieve its objectives (Al-Hakim, 2007). It is widely recognized that facts and data are essential elements of all human activities (Emeka-Nwokeji, 2012). Emeka-Nwokeji (2012) concludes that data quality is crucial to the success of AIS as it can boost a company's performance. Al Qudah and Shukeri (2014) show that data precision has a positive and significant relationship with the perception of a company's internal auditors. Hence,

H₃: Data Quality has a significant positive impact on company performance.

3.7. Data Reliability and SME Performance

The degree to which accounting information is objective, error-free, and faithfully represents reality affects its usefulness for decision-making. The dependability of accounting data refers to how well it accurately represents economic constructs and financial values without bias. However, defining and understanding the dependability of accounting information can be challenging (Maines & Wahlen, 2006). Additionally, companies must comply with accounting standards to handle the growing complexity of business transactions.
H₄: Reliability has a significant positive impact on company performance.

3.8. Ease of Use

Enhanced usability of software has a positive impact on various aspects of a company's output quality, such as increased sales and profits, efficiency, and customer satisfaction. It also results in reduced training and support costs, development time and expenses, and maintenance costs, as well as improved customer retention rates (Bias & Mayhew, 2005). According to Landauer (1996), user-friendly accounting systems aided by information technology help employees improve the quality of their work, generate new ideas, understand data accurately, and boost overall productivity. Therefore, software with easy-to-use interfaces reduces the need for extensive training. In general, software with improved interfaces reduces the time required to perform tasks, enhances staff productivity, and reduces the time and money spent on software development. Hence,

H₅: Ease of use has a significant positive impact on company performance.

4. METHODOLOGY

4.1. Variable Measurement

This study utilized a closed-ended questionnaire consisting of a five-point Likert scale to gather the required data. The questionnaires were distributed to the participants of this study through Google Forms. The questionnaire was designed by referring to relevant literature, as presented in Table 1.

Table 1. Questionnaire development.

Variables	Level of measurement	References
Section A		
Gender	Nominal/Categorical	
Experience using accounting software	Nominal	
Years of service at the current firm	Nominal	Chong and Nizam (2018)
The software package used by the current firm	Nominal/Categorical	
Section B		
Accuracy (AC)	Interval	Chong and Nizam (2018)
Efficiency (EF)	Interval	Ahmi et al. (2019)
Data quality (DQ)	Interval	Chong and Nizam (2018)
Reliability (RB)	Interval	Chong and Nizam (2018)
Ease of use (EU)	Interval	Ahmi et al. (2019)
Performance (PF)	Interval	Ahmi et al. (2019)

The survey used in this study was designed to collect data through a closed-ended questionnaire with a five-point Likert scale. The questionnaire comprised two sections, namely Section A and Section B. Section A consisted of demographic questions, while Section B aimed to collect data on dependent and independent variables. The questionnaire included a total of 36 questions, of which 30 measured the variables, and the remaining 6 gathered demographic information about the respondents. Section B utilized Likert scales to gather data, where respondents were asked to rate each question on a scale of 1 to 5, with 1 indicating "strongly disagree" and 5 indicating "strongly agree".

4.2. Sampling

In industrialized nations, such as the European Union, small and medium-sized enterprises (SMEs) are organizations with fewer than 500 personnel (Eyre & Smallman, 1998). In Malaysia, the SME Corporation defines a firm as an SME if it has 5 to 200 employees (for the manufacturing sector) or 5 to 75 employees (for services and other sectors). Alternatively, a firm is classified as an SME if its annual sales (turnover) range from (in Ringgit Malaysia, RM) RM300, 000 to RM50 million (for the manufacturing sector) or from RM300, 000 to RM20 million (for services and other sectors). Convenience sampling was used in this study to collect data from individuals who are either owners or employees of SMEs. A total of 150 SMEs located in the Klang Valley area of Malaysia (i.e., Kuala Lumpur and Selangor) were selected for data collection purposes from the SME Directory. The questionnaire was distributed to the chosen individuals via email, and they were asked to complete it using Google Forms. Respondents were given three weeks to fill out the questionnaire from the date they received the email invitation.

5. FINDINGS AND DISCUSSION

A total of 112 individuals completed the questionnaire via Google Form within the timeframe given. Out of the 112 respondents who completed the questionnaire via Google Form, 59 (57%) were male and 53 (34%) were female. The majority of respondents (58.9%) fell within the 21-30 of age bracket, while approximately 25% were in the 31-40 age bracket. In terms of job positions, accountants represented the largest group of respondents (35%), followed by managers (25%) and executives (23%). With regard to experience using accounting software, 45 respondents (43%) had less than two years of experience, while 49 respondents (44%) had three to six years of experience. In terms of duration with their current company, 47 respondents (42%) had been with their present company for less than two years, while 49 respondents had been with their current company for three to six years. Table 2 provides an overview

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of the accounting software used by the respondents.

Table 2. Software used by companies.

Accounting software	Frequency	Percentage
Sage	31	28%
Account	24	21%
SAP	19	17%
Quickbooks	17	15%
Peachtree	14	12%
SQL	3	3%
MYOB	1	1%
Nothing	1	1%
UBS	1	1%
Xeersoft	1	1%
Total	112	100%

Sage had the highest adoption rate of all the accounting programmes used by businesses in Malaysia, with 31 businesses (27.7%) using it for their operations. Auto Count ranked second as the business software product with the second-greatest adoption rate, with 24 companies (21.4%). On the other hand, SAP, Quick Books, and Peachtree were used by 19, 17, and 14 organizations, accounting for 17%, 15.2%, and 12.5%, respectively. According to these results, the software packages with the lowest adoption rates were MYOB, SQL, UBS, and Xeersoft. The adoption rates of these software programs were 0.9%, 2.7%, 0.9%, and 0.9%, respectively, since only one organization utilized each of them. Table 3 presents the descriptive statistics of the variables used in this study.

Table 3. Descriptive statistics.

Variables	Mean	Std. dev.	Skewness
AC (Accuracy)	18.46	2.36	0.56
EF (Efficiency)	18.11	3.43	0.68
DQ (Data quality)	18.59	3.34	0.50
RB (Reliability)	18.67	3.56	0.34
EU (Ease of use)	18.42	3.56	0.49
PF (Performance)	18.64	3.56	0.33

The results in Table 3 indicate that the skewness statistics for the variables are less than 1, indicating a normal distribution (Joseph, Black, Babin, & Anderson, 2010). The reliability of the variables was assessed using Cronbach's alpha. To be considered reliable, Cronbach's alpha value should be greater than 0.7 (DeVellis, 2012; Joseph et al., 2010). The results of Cronbach's alpha analysis are presented in Table 4.

Table 4. Reliability tests.

Variables	Number of items	Cronbach's alpha
AC	5	0.78
EF	5	0.78
DQ	5	0.79
RB	5	0.82
EU	5	0.81
PF	5	0.82

The results presented in Table 4 indicate that all Cronbach's alpha values are above 0.70, indicating that the measurement instruments are reliable and consistent (DeVellis, 2012; Joseph et al., 2010). Next, to test the hypotheses, multiple regression analysis was conducted, and the results are presented in Table 5.

Results reported in Table 5 indicate that the F statistics are statistically significant, indicating that the regression model is fit (Joseph et al., 2010). Among the five independent variables, only three (data accuracy, quality, and reliability) have a significant influence on company performance, as hypothesized. This suggests that the accuracy, quality, and reliability of the data produced by an AIS are positively associated with the performance of SME

companies in Malaysia. On the other hand, the efficiency and ease of use of the AIS do not have a significant relationship with SME performance.

Table 5. Regression analysis results.

Variables	Coefficients	Std. error	t values	P significance
Constant	0.879	1.123	0.783	0.435
AC (H₁)	0.219	0.119	1.844	0.068***
EF (H₂)	0.001	0.126	0.009	0.993
DQ (H₃)	0.376	0.115	3.277	0.001*
RB (H₄)	0.250	0.121	2.071	0.041**
EU (H₅)	0.111	0.105	1.058	0.293
Model summary	Adjusted R²: 0.71 F-statistics: 54.34*			

Note: Significant at: * $p<0.01$; ** $p<0.05$ and ***$p<.10$ respectively.

5.1. Accuracy (H₁)

The finding that accuracy has a significant impact on the performance of SME firms in Malaysia is consistent with previous studies. Additionally, according to Banker and Kauffman (1991), inaccurate operational data gathered by accounting software can result in less waste and lower labor costs. Ghasemi et al. (2011) further emphasize the importance of internal check and balance controls in accounting systems to ensure that all transactions and accounts are appropriately balanced and correct before the release of financial statements. Therefore, the results of this study suggest that, in the context of SMEs in Malaysia, the accuracy of the data produced by an AIS is positively associated with firm performance.

5.2. Efficiency (H₂)

The evidence suggests that efficiency has no significant impact on the performance of SMEs in Malaysia. According to Yu and Zhang (2020), this finding refutes the claim that an effective AIS can result in improved performance. In their study, Yu and Zhang (2020) show that information technology can reduce the processing time required to generate financial data while also increasing the effectiveness and quality of the data produced. Nevertheless, in the specific context of SMEs in Malaysia, our research found no association between the efficiency of an AIS and performance.

5.3. Data Quality (H₃)

The evidence presented in our study indicates a positive association between data quality and the performance of SMEs in Malaysia, which is consistent with previous research by Emeka-Nwokeji (2012), Al Qudah and Shukeri (2014), and Wixom and Watson (2001). These studies have also emphasized the importance of data quality for organizational performance. Specifically, high-quality data can help firms make more informed and effective decisions, which can contribute to improved overall performance. Therefore, our findings further highlight the critical role of data quality in enhancing the performance of SMEs in Malaysia.

5.4. Reliability (H₄)

Our study provides evidence that reliability is positively related to the performance of SMEs in Malaysia. This finding is consistent with Al-Dmour's (2018) research, which also found a strong and positive association between the reliability of the AIS and company success. In contrast, our evidence contradicts the findings of some other studies. Our results also support the findings of Gorla, Somers, and Wong (2010), who reported a positive relationship between the quality of information systems and company performance. When information is accurate and provided without errors, the accounting system is considered reliable, which can lead to prompt and effective decision-making and ultimately enhance the company's overall efficiency (Gorla et al., 2010).

5.5. Ease of use (H₅)

Our study findings indicate that ease of use has a positive impact on the performance of SMEs in Malaysia. This result is consistent with earlier studies by Bias and Mayhew (2005), Bharati and Chaudhury (2006), and Gefen and Straub (2000), which also identified ease of use as a crucial factor in the adoption and successful implementation of information systems. Therefore, having an AIS that is easy to use can ensure that everyone in the organization can utilize the system effectively for both operational and strategic processes, leading to improved decision-making and overall performance.

6. CONCLUSION AND RECOMMENDATION

The purpose of our study was to examine how data technology impacts accounting systems and the performance of SMEs in Malaysia. To enhance the effectiveness of the accounting data system, it is important to clarify the concept of the system and improve its technology while providing ongoing training to deepen staff understanding. Additionally, given the increase in potential threats and risks with technological advancements, it is essential to upgrade security measures in order to protect the system (Meiryani, Heykal, & Wahyuningtias, 2020). To ensure effective separation of duties and oversight of performance, a trustworthy individual should be recruited to serve as a confidential user of the accounting information system, reporting directly to management according to the organizational structure. Responsibilities should also be divided according to the organizational structure, and the designated individual should not be given access to any security systems without the manager's knowledge, unless it is a last-minute emergency (Al-Jabali & Tawfeq, 2014). Finally, it is crucial to provide internal and external training for accountants and decision-makers and to give organizational culture the attention it deserves as it impacts the quality of accounting data. Staff practices related to accounting data quality should adhere to international standards, and a noble culture and strong work ethic should be promoted. It is important to adopt diagnostic studies to regularly analyze the organization's culture and track the impact of these values on the accounting data system. In addition to having an adaptable accounting data system capable of processing and managing any required data and information, employees must also receive training on accounting information systems (Aldegis, 2018). Finally, in order to ensure high-quality accounting data systems that adhere to international standards, it is important to give organizational culture the attention it deserves through internal and external training for accountants and decision-makers. This training should aim to promote a strong work ethic and a culture of excellence. Regular diagnostic studies should be conducted to analyze the impact of these values on the accounting data system. Additionally, employees should receive training on accounting information systems, and the organization should have an adaptable system that can manage any type of data and information required by management and decision-makers. Aldegis (2018) recommends these steps to promote a culture of excellence and ensure high-quality accounting data systems.

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