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# Measuring cloud information systems' effect on financial information quality using the information system success model: Evidence from Saudi Arabia

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**A B S T R A C T**

This paper explores the effects of cloud information systems on the quality of financial reporting within Saudi Arabian enterprises, utilizing the DeLone and McLean Information Systems Success Model as its theoretical foundation. The central inquiry of this research assesses the influence of cloud information systems on the quality of financial data. It hypothesizes a beneficial correlation between these elements. The study involved 203 auditors from Saudi accounting firms, and the findings underscored a significant positive influence of the model's six dimensions on financial information quality. The utilization of cloud information systems appears to bolster financial reporting quality in organizations. This research enriches existing literature by empirically validating the positive effects of cloud information systems on financial data quality in Saudi contexts. Additionally, it underscores the practical utility of the IS Success Model in evaluating the efficacy of cloud information systems in enhancing financial information quality. These insights are particularly valuable for managers and policymakers contemplating the adoption of cloud-based systems to augment their financial reporting processes.

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## 1. Introduction

In recent years, technologies have advanced with the aim of boosting the quality of financial information (Alotaibi, 2023b). In addition, the integration of advanced technological capabilities has significantly enhanced the ease of using accounting information system tools, such as predictive analytics, streamlining complex data analysis, and decision-making processes (Alotaibi, 2023c). One such technology is cloud computing systems (CIS). The CIS has become an essential tool for businesses looking to optimize their information systems, with adoption rising due to their cost-effectiveness and flexibility (Al Natour, 2021; Dai & Vasarhelyi, 2023; Kabra, Ghosh, & Joshi, 2023; Stratopoulos & Wang, 2022). With a CIS, organizations can streamline their financial information and improve decision-making, transparency, and performance (Cong, Du, & Vasarhelyi, 2021). To comprehensively assess the impact of a Cloud Information System (CIS) on the quality of financial data, it is essential to measure the system's success. The DeLone and McLean Information Systems Success Model (IS Success Model) serves as a prominent framework for this purpose (DeLone & McLean, 2003). This model delineates six critical dimensions of information system success: system quality, information quality, service quality, user satisfaction, use, and net benefits. These categories have been employed in this study to gauge the influence of a CIS on the financial information quality within Saudi Arabian organizations, providing a structured approach to understanding how effectively these systems meet organizational needs and enhance financial reporting accuracy. This research aims to explore the association between the utilization of CIS and the quality of financial information in Saudi Arabian organizations. It specifically investigates whether the six dimensions of the IS Success Model—system quality, information quality, service quality, user satisfaction, use, and net benefits—exhibit a positive correlation with the quality of financial information in firms

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employing CIS. The methodology involved distributing a questionnaire among auditors from various accounting firms in Saudi Arabia, selected through convenience sampling. This survey comprised items reflecting the six dimensions of the IS Success Model and aspects of financial information quality, rated on a Likert scale from "strongly disagree" to "strongly agree". The responses were then subjected to descriptive statistics and regression analysis to discern patterns and relationships within the data.

It is imperative to analyze the effects of CIS on the quality of financial data within Saudi Arabian organizations to grasp the significance of cloud computing technologies in managing financial information. The IS Success Model plays a vital role in this context as an essential framework for evaluating the effectiveness of information systems. This study delved into the correlation between the use of CIS and the enhancement of financial information quality, offering valuable insights into how organizations can elevate their financial reporting standards through the adoption of CIS. By exploring this relationship, the research contributes to a deeper understanding of the strategic benefits of cloud technology in financial data management. More specifically, this study's findings provide valuable insights into the impact that a CIS can have on the financial information quality of organizations in Saudi Arabia, thus helping organizations to make informed decisions about whether to use a CIS to improve their financial information quality. Moreover, this study contributes to the literature on the IS Success Model and its applicability to Accounting Information Systems research.

### *1.1 Contributions*

This study significantly enriches the existing literature concerning the impact of CIS on financial information quality within Saudi Arabian organizations. It offers insightful revelations about how the utilization of CIS influences financial data quality. By scrutinizing the six dimensions of the IS Success Model, the research pinpoints the critical elements that underpin the success of CIS in augmenting financial information quality. These insights are crucial for organizations in Saudi Arabia as they provide a well-informed basis for making decisions regarding the adoption and practical application of CIS to enhance the quality of their financial reporting.

Secondly, this study enhances the literature on the IS Success Model by applying it specifically to accounting information systems research. The IS Success Model is acclaimed as an effective framework for assessing the success of information systems across multiple domains; however, its application within the field of accounting information systems has been relatively underexplored. This research addresses this gap by demonstrating the model's relevance and utility in evaluating the performance of CIS within the accounting sector, thereby broadening the scope of its applicability and contributing valuable insights into its effectiveness in a new context. Thus, this present study extends its use to the context of accounting information systems in order to provide evidence of its effectiveness for evaluating the success of a CIS in enhancing financial information quality.

Thirdly, this study furnishes compelling evidence regarding the efficacy of CIS in elevating the financial information quality of Saudi Arabian organizations. The findings reveal that the six dimensions of the IS Success Model—system quality, information quality, service quality, user satisfaction, use, and net benefit—positively correlate with financial information quality. This alignment is consistent with prior research, which has documented the favorable effects of CIS on organizational performance and financial decision-making. Furthermore, the study contributes empirical evidence supporting the utility of CIS in improving financial information quality specifically within the context of Saudi Arabian organizations, thus affirming its value and applicability in this geographical and economic setting.

Fourth, this study significantly adds to the literature concerning the adoption and usage of CIS in developing nations. Although the adoption of CIS has been extensively explored in developed countries, there remains a dearth of research focusing on its adoption and utilization in developing countries, particularly within the realm of accounting information systems. Consequently, this research provides crucial insights into the implementation and operationalization of CIS in Saudi Arabia—a developing nation with an expanding economy. These insights are particularly valuable for organizations and policymakers in similar contexts, aiming to leverage technology to enhance financial reporting and decision-making processes. Such findings will help policymakers and organizations in other developing countries to understand the benefits of CIS and make informed decisions about their adoption and use.

Finally, this research enriches the burgeoning body of knowledge concerning cloud computing and its influence on organizational performance. Cloud computing represents a transformative technology that revolutionizes how organizations handle their information systems. However, its impact on organizational performance and the quality of financial information remains a subject of ongoing debate. By providing concrete evidence of CIS's effectiveness in improving financial information quality, this study contributes significantly to our comprehension of cloud computing's role in enhancing organizational performance. It not only substantiates the benefits of CIS but also clarifies the broader implications of cloud technology in the organizational context.

This study offers crucial insights into the nexus between the utilization of a CIS and the enhancement of financial information quality within Saudi Arabian organizations. It also significantly contributes to various scholarly domains: it enriches the literature on the IS Success Model, advances accounting information systems research, explores the adoption and use of CIS

in developing countries, and delves into the broader impact of cloud computing on organizational performance. Additionally, the findings of this study equip organizations in Saudi Arabia and other developing nations with evidence-based guidance to make informed decisions regarding the adoption and implementation of CIS. By doing so, they can improve their financial information quality, thereby potentially boosting their overall organizational performance.

### *1.2 Research question*

Cloud computing has gained immense popularity over the years because it offers flexible, cost-effective, and scalable solutions for organizations to manage their information systems. In Saudi Arabia, organizations have increasingly adopted cloud information systems (CISs) to streamline their financial information management, with this leading to improved decision-making, transparency, and organizational performance. However, it is crucial to evaluate how successful CISs are at improving financial information quality, which is in turn essential for effective financial decision-making. Thus, the research question for this study is:

*How does the use of CISs affect the financial information quality of organizations in Saudi Arabia, based on the D&M IS Success Model?*

This research question is significant because using a CIS for financial information management has several implications for organizations, such as improving decision-making and enhancing transparency and organizational performance. Thus, our understanding of the relationship between using a CIS and financial information quality in Saudi Arabian organizations is crucial. Moreover, the IS Success Model's six dimensions provide a comprehensive potential framework for evaluating the success of a CIS at improving financial information quality, thus making the research question particularly relevant.

This study collected data from auditors who audit firms that use CISs in Saudi Arabia in order to answer the above research question. A questionnaire served as the primary research instrument for data collection in this study, incorporating statements that pertained to the six dimensions of the IS Success Model and financial information quality. The data harvested from these questionnaires were meticulously analyzed through descriptive statistics and regression analysis. This methodological approach was instrumental in elucidating the relationship between the utilization of a CIS and the quality of financial information. The statistical analyses provided a robust framework for interpreting how each dimension of the IS Success Model impacts the effectiveness and reliability of financial reporting within organizations that adopt cloud-based information systems.

The organization of this study is methodically laid out as follows: Section 2 provides a detailed literature review alongside the development of hypotheses. Section 3 outlines the research methodology and the procedures for selecting the sample. The results and data analysis are elaborated in Section 4. Section 5 proceeds to discuss these results, interpreting their significance and implications. The final section offers a comprehensive summary of the research and explores its broader implications, providing a cohesive conclusion to the study and underscoring its contributions to the field.

## 2. Literature Review and Theoretical Background

### *2.1 Cloud information systems for financial information quality*

CISs have become increasingly popular tools for organizations to store, process, and manage data (Alotaibi, 2023a; Narkhede, Raut, Narwane, & Gardas, 2020), and adopting cloud computing has significantly changed how organizations handle their data needs (Chitharanjan & SenthilKumar, 2021). The quality of the information in CISs has therefore become a critical research area. In this literature review, we explore the existing research for CISs and their impact on information quality by drawing on relevant studies and research articles.

One key aspect of information quality in CISs is data accuracy, because accurate data is essential for auditing and decision-making in organizations (Alotaibi & Alnesafi, 2023). Nevertheless, a CIS presents unique challenges that can affect data accuracy. For example, data integration involves consolidating data from multiple sources, and this can be complex for a CIS due to differences in data quality among the various sources (Qi, Sun, & Hosseini, 2023). Data migration, which is the process of transferring data from one CIS to another, can also introduce data-accuracy issues (Ali & Oudat, 2020). Data replication, which is commonly used in CIS for data redundancy and fault tolerance, can also lead to inconsistencies between replicated copies of data, thus compromising data accuracy (Cheraghlou, Khadem-Zadeh, & Haghparast, 2016).

Research has also emphasized the importance of data completeness in CIS, which refers to the extent to which data in a CIS is comprehensive and contains all the necessary elements for a given task or analysis. Definitely, incomplete data can hinder organizational decision-making and analysis (Aydiner, Tatoglu, Bayraktar, & Zaim, 2019), and data completeness can be compromised in a CIS due to data extraction, transmission, and storage (Fernando, Achmad, & Gui, 2019). For instance, data

may be omitted or truncated during data extraction, leading to incomplete information, or data transmission between different components of a CIS can also result in data loss or corruption, thus compromising data (Alizadeh, Chehrehpak, Nasr, & Zamanifard, 2020). Additionally, data storage in CIS may involve different formats or locations, and this can also challenge data completeness (Wang, Wang, Ren, Cao, & Lou, 2011). Furthermore, data consistency is a critical aspect of information quality in a CIS. Data consistency refers to the coherence and accuracy of data across different components of a CIS, such as databases, applications, and servers. Inconsistent data in a CIS can then result in incorrect or misleading information, with there being unexpected consequences for decision-making and operations (J. Wang, Yang, & Li, 2022). Studies have shown that data consistency can be compromised in a CIS due to data updates, replication, and synchronization. For example, conflicts may arise when multiple users update data simultaneously in a CIS, leading to inconsistent data (J. Wang et al., 2022). Data replication, which is commonly used in a CIS for fault tolerance and performance optimization, can also introduce inconsistencies because the replicated copies of data may not be updated synchronously (Faccia, Al Naqbi, & Lootah, 2019). Data synchronization, which aims to maintain consistent data across the different components of a CIS, can therefore be challenging due to the coordination and communication requirements, and this may introduce delays or errors (Ali & Oudat, 2020). Moreover, data security and privacy are also critical considerations in a CIS, and they directly impact information quality. Organizations must ensure that the data stored and processed in a CIS is secure and protected from unauthorized access or other breaches. Studies have highlighted the importance of robust security measures—such as encryption, access controls, and authentication—to ensure data confidentiality, integrity, and availability in CIS (Gill et al., 2022). Data privacy is also a concern for a CIS, because organizations must comply with regulations and protect sensitive data, such as personally identifiable information (PII) and financial data. Failure to ensure data security and privacy in a CIS can result in breaches, reputational damage, and legal repercussions, thus leading to compromised information quality.

### *2.2 The IS Success Model*

The IS Success Model has been extensively utilized to assess the efficacy of information systems in organizations (Akrong, Yunfei, & Owusu, 2022; M. Al-Okaily, 2021; Hertati, Safkaur, & Simanjuntak, 2020; Ogunmola & Kumar, 2023; Sabah et al., 2021). DeLone and McLean (2003) model originally outlines six critical dimensions: system quality, information quality, service quality, user satisfaction, use, and net benefit. The framework underwent revisions in 2003 to incorporate additional elements like service quality, which were added to address the evolving landscape of information systems amidst the surge in e-commerce (DeLone & McLean, 1992). The applicability of the IS Success Model across various studies underscores its robustness in evaluating information systems within organizational settings. For instance, Pitt, Watson, and Kavan (1995) explored the service quality of information systems, highlighting that enhancements in the attitudes of IT personnel and users, alongside better communication and expectations management, could elevate service quality. Also, P. Seddon and Kiew (1996), Myers, Kappelman, and Prybutok (1997), P. B. Seddon (1997), and Kulkarni, Ravindran, and Freeze (2006) have similarly leveraged this model to investigate the impacts of organization-led information systems.

The enhancement of the IS Success Model to include service quality as a dimension has garnered substantial empirical backing. For example, Kettinger and Smith (2009) identified the importance of service quality in information systems through their research. underscored the critical role of service quality in information systems through their detailed research. The visual depiction of the IS Success Model, as proposed by DeLone and McLean in 1997, can be seen in Figure 1. This model was further refined in 2003, when DeLone and McLean incorporated service quality into the framework. This addition was aimed at providing a clearer understanding of the cause-and-effect relationship among system quality, information quality, and service quality, and their collective impact on user satisfaction and effective use of an information system. This revision has significantly contributed to a more holistic view of how various elements of information systems success interact to enhance organizational performance.

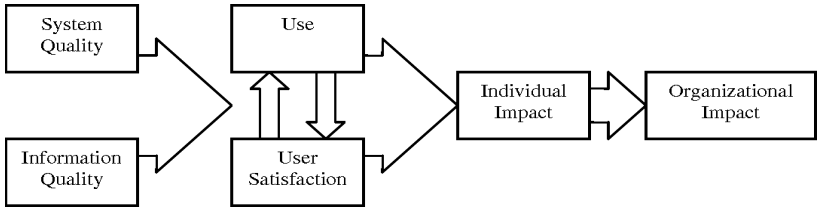


**Fig. 1.** DeLone and McLean's Model of IS Success

Moreover, the evaluation of information systems' success extends beyond product features to include service quality. According to Pitt et al. (1995), users' satisfaction with system quality and information quality significantly enhances individual performance. This enhancement is due to the promotion of efficient and effective work practices, which not only boost individual efficiency but also contribute substantially to the broader organizational development. This holistic approach to assessing information systems underscores the integral role that service quality plays in ensuring the overall efficacy and impact of these systems within an organization. The IS Success Model, significantly updated by DeLone and McLean in 2003, has been effectively adapted for use in e-business systems, demonstrating its versatility across various information system

environments. In their evaluation, they highlighted the model's utility in the e-business sector, using system usage, user satisfaction, and net benefits as key indicators of information effectiveness, thereby underscoring the model's broad applicability and relevance. Furthermore, the model has found extensive application in Accounting Information Systems (AIS) research, where it has been employed to assess the success of such systems within organizations (Al-Hattami, 2021; A. Al-Okaily, Al-Okaily, Shiyyab, & Masadah, 2020; Lutfi, 2023; Lutfi, Al-Okaily, Alsyouf, & Alrawad, 2022). The model originally included dimensions such as system quality, information quality, user satisfaction, use, and net benefit. Notably, it has been revised to incorporate additional aspects like service quality, reflecting ongoing changes in the information systems landscape. This revision has been bolstered by empirical studies that affirm the significance of service quality in various settings, including e-business systems. The IS Success Model provides a robust framework for evaluating the success of information systems, illustrating its effectiveness in improving organizational operations across diverse settings (Al-Hattami, 2021; Lutfi, 2023; Lutfi et al., 2022).

### *2.3 Theoretical background*

The IS Success Model stands as a widely recognized theoretical framework in the field of information systems. Over the years, this model has undergone several updates, driven by ongoing research contributions and the evolving landscape of information system management and functionality (DeLone & McLean, 1992, 2003). These revisions have ensured that the model remains relevant and effectively addresses the changing dynamics and increased complexity of information systems in modern organizational environments. This adaptability highlights the model's enduring relevance and utility in assessing the success of information systems across diverse technological and business contexts. The revised version of the model, as shown in Figure 2, places a strong emphasis on the dimensions of information quality, systems quality, and service quality. These components are identified as crucial for the success of information systems. By focusing on these key areas, the updated model addresses the essential aspects that contribute to the efficient and effective functioning of information systems, enhancing user satisfaction and overall organizational performance. This refinement of the model underscores the importance of these dimensions in meeting the growing demands and complexities of modern information system management.

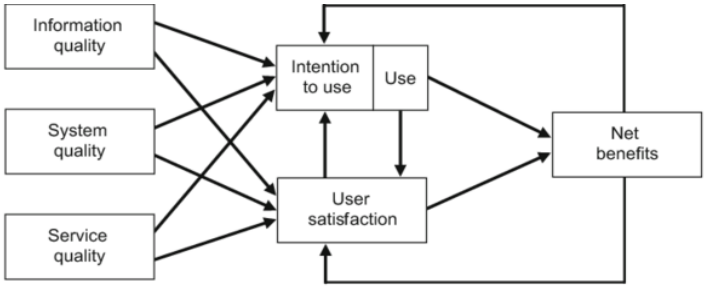


**Fig. 2.** The Updated D&M IS Success Model

The three primary dimensions outlined in the model—information quality, systems quality, and service quality—are each believed to significantly impact user satisfaction and the actual use of information systems, meriting their distinct measurement due to their different effects on outcomes. A positive experience with a system typically enhances user satisfaction, which in turn fosters a greater intention to use the system, eventually leading to its actual use. The model delineates between 'intention to use,' seen as an attitude, and 'actual use,' which is considered a behavior. This distinction is crucial, as it implies that the intention to use might serve as a viable alternative measure in contexts where distinguishing between processes and causal relationships is necessary. Additionally, the model emphasizes the importance of net benefits as a critical outcome of an information system's success. It posits that positive net benefits from a system reinforce both its actual use and user satisfaction. Conversely, if the net benefits are perceived as negative, it could lead to decreased use and eventually, the discontinuation of the system. This aspect of the model underscores the direct impact of perceived benefits on the long-term viability and effectiveness of information systems within an organization.

The revised D&M IS Success Model, illustrated in Fig. 2, provides the theoretical underpinning for our study entitled “Measuring Cloud Information Systems’ Effect on Financial Information Quality Using the Information System Success Model: Evidence from Saudi Arabia”. This model serves as a comprehensive framework for analyzing the interrelationships among information quality, systems quality, service quality, use, user satisfaction, and net benefits, specifically within the context of cloud information systems and financial information quality in Saudi Arabia. The directional arrows in the model signify proposed associations which, although illustrated in a process-oriented manner, need to be empirically hypothesized and tested within the specific context of this research.

In this study, we hypothesize that the superior quality of cloud information systems correlates positively with increased system usage, enhanced user satisfaction, and favorable net benefits. These associations are anticipated to be positive, reflecting the

beneficial impact of high-quality cloud systems on organizational outcomes. Overall, the updated D&M IS Success Model furnishes a robust theoretical basis for scrutinizing the efficacy of cloud information systems and their consequential impact on the quality of financial information in Saudi Arabia, facilitating a deeper understanding of these dynamics and contributing to the broader discourse on information system success.

### *2.4 Hypothesis development*

The hypothesis for this research paper is firmly grounded in the theoretical framework of the IS Success Model to investigate the role of CIS in enhancing financial information quality within organizations. The IS Success Model articulates six key dimensions that determine the success of information systems. These dimensions include system quality, information quality, service quality, user satisfaction, use, and net benefit. By employing this model, our study posits that high levels of system quality, information quality, and service quality in CIS are predictive of increased user satisfaction, more extensive usage, and greater net benefits. This hypothesis integrates the model's comprehensive approach to evaluating information system success, thereby enabling a nuanced analysis of how effectively CIS can enhance financial information quality in organizations.

Previous research has shown that using a CIS can positively impact an organization's financial information quality. For example, Laudon and Laudon (2013) found that using a CIS improved the financial information quality in organizations by enhancing system quality and information quality. Similarly, Khayer, Bao, and Nguyen (2020) found that using a CIS positively influenced financial information quality through improved system quality, service quality, and user satisfaction. Such findings suggest there is a positive relationship between using a CIS and better financial information quality in organizations.

Additionally, research conducted within Saudi Arabia corroborates the positive influence of using a CIS on financial information quality. For instance, Al Natour (2021) noticed that the deployment of a CIS markedly enhances the quality of financial information in Saudi organizations, pinpointing system quality, information quality, and user satisfaction as key contributors to this enhancement. This evidence aligns with the hypothesis that there exists a favorable relationship between the use of a CIS and the quality of financial information in Saudi organizations. Drawing from the theoretical foundation established by the IS Success Model and prior investigations into the effects of a CIS on financial information quality, the following hypothesis is proposed:

**H:** *There is a positive relationship between the utilization of a CIS and the quality of financial information among organizations in Saudi Arabia, as measured by the six dimensions of the IS Success Model (i.e., system quality, information quality, service quality, user satisfaction, use, and net benefit).*

This hypothesis suggests that using a CIS positively impacts the quality of financial information in Saudi Arabian organizations, as reflected in the dimensions of the IS Success Model.

## 3. Research Methodology

Fig. 3 presents the flowchart for the research methodology used in this study. The flowchart outlines the sequence of steps for conducting the research and obtaining the results.

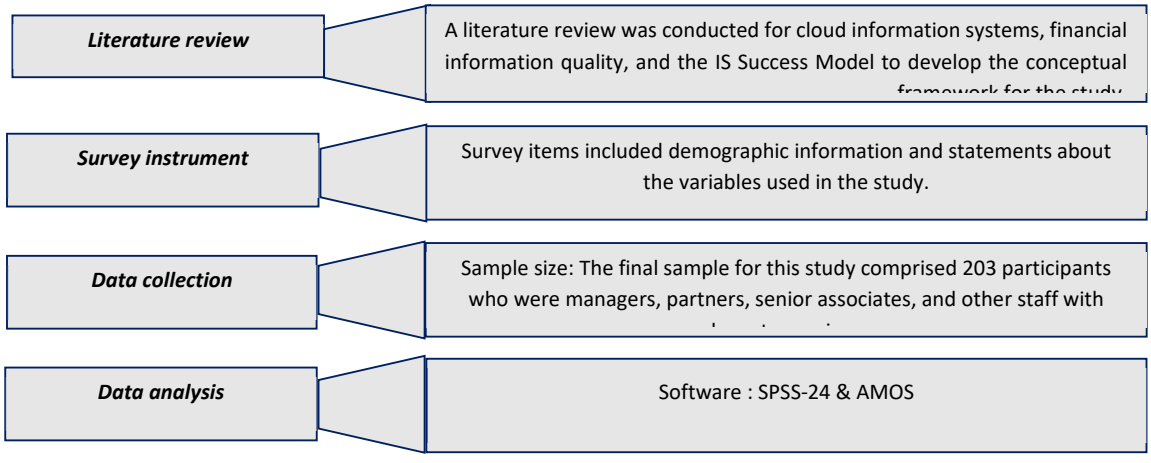


**Fig. 3.** Flowchart for the research methodology

The methodology includes several stages, from reviewing the existing literature on cloud information systems and the IS Success Model. This was followed by formulating a research question and hypothesis based on the literature review. The next step involved collecting data through a survey. This collected data was then analyzed using appropriate statistical techniques to test the hypothesis and draw a conclusion. Finally, the findings were interpreted, discussed, and some implications are drawn. The flowchart visually represents the research process, with it highlighting the logical flow of activities from literature review to data collection, analysis, and interpretation. This ensured a systematic and rigorous approach to the research study. The following subsections outline the research methodology that structured and organized the research process. These subsections explain the research's design and execution and analyze the study systematically and rigorously, thus ensuring our results are accurate and reliable.

### *3.1 Sample and data*

We first used an online survey to gather primary data from auditors working in accounting firms in Saudi Arabia. We wanted to ensure that the survey was reliable and valid, so we pilot-tested it before deploying it to a wider audience. The survey was later distributed between August and December 2022 through email and various social media platforms to get a diverse range of participants. We recruited 209 participants for this study, all working in auditing services in Saudi Arabia. The participants were managers, partners, senior associates, and other staff members with relevant field experience. Unfortunately, six responses had to be excluded from the final analysis due to having missing or invalid values. Despite this, we are confident that the sample accurately represents the population of auditors working in Saudi Arabian accounting firms during the study period. Finally, statistical methods were used to analyse the data collected from the survey.

### *3.2 Dependent variable*

The dependent variable in this study, financial information quality, is defined as the extent to which financial information produced by a CIS is accurate, timely, reliable, and relevant for decision-making within Saudi organizations. Several studies have established the importance of financial information quality as a critical factor in the success of organizations. For instance, Ali, Bakar, and Omar (2016) found that financial information quality positively influences decision-making effectiveness in Jordanian firms. Similarly, Al Natour (2021) found that financial information quality positively affects organizational performance in Saudi Arabia. This research evaluates financial information quality using the IS Success Model's six dimensions: system quality, information quality, service quality, user satisfaction, use, and net benefit. Each dimension provides a distinct perspective on the effectiveness of a CIS, together forming a comprehensive framework for analysis. These dimensions have been widely used in previous studies to measure the success of a CIS and its impact on organizational performance. For instance, Ali et al. (2016) used the IS Success Model to examine the impact of CIS on organizational performance in Jordanian banks. They found that all six dimensions of the model significantly influenced the success of a CIS in enhancing organizational performance. Similarly, Al Natour (2021) used the IS Success Model to evaluate the effectiveness of CIS in Saudi Arabia. The study found that system, information, and service quality significantly influence user satisfaction and consequently the success of a CIS. In terms of this study's specifics:

- **System quality** is gauged by the reliability, efficiency, and effectiveness of the CIS infrastructure, hardware, and software.
- **Information quality** measures how accurate, complete, and relevant the financial information generated by the CIS is.
- **Service quality** assesses the timeliness, responsiveness, and effectiveness of the support provided by the CIS to its users.
- **User satisfaction** captures the extent to which users are pleased with the CIS's quality and their overall experience.
- **Use** determines how extensively users actually engage with the CIS to perform their tasks.
- **Net benefit** evaluates the extent to which the CIS boosts the individual performance of its users and, subsequently, the overall performance of the organization.

These dimensions collectively provide a comprehensive view of how effectively a CIS can enhance financial information quality, facilitating informed decision-making within the organizational context. The six dimensions of the IS Success Model provide a comprehensive framework for measuring the impact of a CIS on financial information quality and organizational performance. By adopting this model, this study aimed to provide empirical evidence for the positive relationship between a CIS and financial information quality in Saudi Arabian organizations.

Table 1 showcases the survey statements derived from DeLone and McLean (2003), structured around the IS Success Model's six dimensions. These statements, formatted on a Likert scale, are designed to capture respondents' perceptions regarding the CIS's reliability, the accuracy of its information, the quality of customer service, overall satisfaction, usage frequency, and its impact on job performance. The collected data from these measures are utilized to assess the hypothesized positive relationship between the use of a CIS and the quality of financial information in Saudi Arabian organizations.

**Table 1**
The statements based on the IS Success Model

| S# | Statements | IS Success Model Type |
|---|---|---|
| S1 | The financial information gathered from my clients' CIS is reliable and relevant. | Information Quality |
| S2 | The clients' CIS is effective and efficient. | System Quality |
| S3 | The backup & security services provided by the cloud computing company meets my expectations as auditor. | Service Quality |
| S4 | I use my clients' CIS frequently to perform my audit tasks. | Use |
| S5 | Overall, I am satisfied with the CIS used by my clients. | User Satisfaction |
| S6 | My clients' CIS has improved their overall financial information quality. | Net Benefits |

### *3.3 Independent variable*

The independent variable in this study is the use of a CIS in organizations in Saudi Arabia, specifically the frequency of use, perceived benefits, and overall satisfaction with the system. The use of a CIS has become increasingly popular in recent years because it can offer numerous advantages, such as lower cost, greater accessibility, and improved scalability. Previous studies have investigated the impact of using a CIS on various aspects of organizational performance, including financial performance. For example, research by Radicic and Petković (2023) found that using a CIS positively affected financial performance in small and medium-sized enterprises (SMEs). Similarly, a study by Oweis (2022) found that using a CIS had a positive impact on financial performance in the banking sector in Saudi Arabia. The use of a CIS has also been shown to positively impact other dimensions of the IS Success Model, such as system quality, information quality, service quality, user satisfaction, use, and net benefit (DeLone & McLean, 2003). The use of a CIS is therefore expected to have a positive impact on financial information quality in organizations in Saudi Arabia, as measured by the six dimensions of the IS Success Model.

## 4. Data analysis and results

### *4.1 Instrument validation*

The coefficient alpha of Cronbach (1951) is widely recognized as a practical and reliable tool for assessing the internal consistency of a scale or survey instrument . In this context, Cronbach's alpha is used to ensure that the survey items are acceptable, reliable, and consistent in their measurement of the target construct. The higher the alpha value, the more reliable and consistent the instrument can be. In the case of the 6-item survey in Table 2, the Cronbach's alpha value of 0.89 suggests a high level of internal consistency and reliability, so the survey could be considered a well-designed tool for collecting data on the targeted construct.

**Table 2**
Validity and reliability test

| *Cronbach's alpha* | *Number of items* |
|---|---|
| 0.89 | 6 |

### *4.2 Demographic analysis*

The demographic analysis section of this paper provides information about the sample characteristics of the study. The demographics include gender, education, years of experience, and job position. The data in Table 3 reveals that most respondents were male (58%), and most had a Bachelor's degree (59%). This information is essential because it helps us understand the sample's characteristics, which can have implications for the generalizability of this study's findings.

**Table 3**
Demographic information

| *Demographic Items* | | *Frequency (203)* | *Response rate* |
|---|---|---|---|
| Gender | Male | 117 | 58% |
| | Female | 86 | 42% |
| Education | Bachelor's Degree | 120 | 59% |
| | Master's Degree | 46 | 23% |
| | PhD | 4 | 2% |
| | Other | 33 | 16% |
| Years of experience | 0–2 Years | 62 | 30% |
| | Above 2, less than 4 | 58 | 29% |
| | Above 4, less than 6 | 27 | 13% |
| | More than 6 years | 56 | 28% |
| Job position | Partner | 42 | 21% |
| | Manager | 42 | 21% |
| | Senior | 60 | 29% |
| | Other | 59 | 29% |

The data for years of experience shows that the sample included a range of experience levels, with the largest group having more than six years of experience (28%). This information is important, because experience may influence the participants' perceptions of a CIS and financial information quality. Individuals with more experience may have a different perspective than those with more limited experience, and this could affect their responses to the survey statements. The job position data shows that the sample covered various job positions, with the *Senior* and *Other* positions being the most common (29% each). Again, this information is key, because staff in different job positions may have different experiences with a CIS and financial information quality, which again could influence their responses to the survey statements. Overall, the demographic analysis section provides some important information about the sample characteristics, and this is necessary for understanding the generalizability of the study's findings. By including this information, readers can better evaluate whether the findings could be applied to other populations and settings.

### *4.3 Descriptive analysis*

Table 4 presents the descriptive analysis of the data that was collected using a questionnaire based on the IS Success Model. The table shows the number of valid responses (203) and the mean, standard deviation, and variance for each of the six survey statements (S1 to S6), which are related to the six dimensions of the model. The mean is a measure of central tendency, because it represents the participants' average response to each of the survey statements. The mean scores for each statement in Table 4 range from 3.41 to 3.67, indicating that, on average, the participants responded positively to the statements. The standard deviation, meanwhile, is a measure of dispersion that reflects how much the responses deviate from the mean. The standard deviation scores for each statement range from 1.36 to 1.52, indicating a moderate degree of variability in the responses. The variance is the square of the standard deviation and represents the degree of dispersion in the data. The variance scores for each statement range from 1.85 to 2.32, indicating that the responses are relatively spread out.

The results of the descriptive analysis suggest that the auditors who participated in this study tend to have a positive perception of using the cloud information systems in organizations in Saudi Arabia. The mean scores for all the six statements are above the mid-point of the 5-point Likert scale (i.e., 3), indicating that the participants generally agreed with the statements. Looking at each statement individually, the highest mean score was for S3, which relates to the service quality dimension of the model. This indicates that the participants were satisfied with the backup and security service provided by the cloud computing company. The lowest mean score was for S6, which relates to the net benefits dimension of the model, suggesting that the auditors did not perceive a significant improvement in their work performance due to using a CIS in their audit tasks. The standard deviation scores for all six statements are relatively similar, with them ranging from 1.36 to 1.52, indicating that the responses were moderately dispersed. This means that while the participants generally agreed with the statements, there was some variability in their responses. The variance scores for each statement also suggest a moderate level of dispersion in the responses. This means that the participants did not all have the same perception of using cloud information systems in Saudi Arabian organizations.

The descriptive analysis presented in Table 4 provides an overview of the participant's responses to the survey statements based on the IS Success Model. These results suggest that the auditors who participated in the study generally had positive perceptions of using cloud information systems in organizations in Saudi Arabia. However, there was some variability in their responses, indicating that not all the participants necessarily had the same perceptions of using CIS in their work tasks. Further analysis using statistical methods is therefore necessary to test the hypothesis and determine the significance of the relationship between cloud information systems and financial information quality in Saudi organizations.

**Table 4**
Descriptive analysis.

| *S#* | *S1* | *S2* | *S3* | *S4* | *S5* | *S6* |
|---|---|---|---|---|---|---|
| *Valid* | 203 | 203 | 203 | 203 | 203 | 203 |
| *Mean* | 3.64 | 3.56 | 3.67 | 3.5 | 3.64 | 3.41 |
| *Std. deviation* | 1.43 | 1.5 | 1.36 | 1.43 | 1.43 | 1.52 |
| *Variance* | 2.04 | 2.25 | 1.85 | 2.04 | 2.04 | 2.32 |

### *4.4 Descriptive statistics*

This study employed descriptive statistics to summarize the responses from a survey distributed among auditors in Saudi Arabia. Table 5 displays the descriptive statistics for the survey items, including the number of valid responses for each item and the correlation coefficients between pairs of items. The correlation coefficient quantifies the strength and direction of the relationship between two variables. Additionally, the p-value is provided for each correlation, indicating the probability that the observed correlation occurred by chance, thereby helping to assess the statistical significance of the relationships.

**Table 5**
Descriptive statistics

| *S# ➔ S#* | *S1 ➔ S4* | *S1 ➔ S5* | *S2 ➔ S4* | *S2 ➔ S5* | *S3 ➔ S4* | *S3 ➔S5* | *S4 ➔ S5* | *S4 ➔ S6* | *S5 ➔ S6* |
|---|---|---|---|---|---|---|---|---|---|
| *Valid* | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 | 203 |
| *Correlations, r(201)* | 0.55 | 0.61 | 0.50 | 0.66 | 0.57 | 0.53 | 0.60 | 0.53 | 0.60 |
| *p (2-tailed)* | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 | <.001 |

Looking at the above table, we can see that there were 203 valid responses for each survey item, suggesting that the sample size is relatively large and that the results are likely representative of the population of auditors in Saudi Arabia. The correlation coefficients in Table 5 reveal some exciting patterns. For example, there is a positive correlation between S1 and S5 ($r = 0.61$, $p < .001$), which suggests that when auditors who see the financial information gathered from their clients' CIS to be reliable and relevant, they are more likely to be satisfied with the CIS overall. Similarly, there is a positive correlation between S2 and S5 ($r = 0.66$, $p < .001$), indicating that auditors who perceive their clients' CIS to be effective and efficient are more likely to be satisfied with the system overall. Another interesting finding is the positive correlation between S4 and S6 ($r = 0.53$, $p < .001$), which suggests that auditors who use their clients' CIS frequently to perform audit tasks are more likely to believe that the system has improved their clients' overall financial information quality. This finding highlights the potential benefits of using a CIS in the auditing process.

Overall, the descriptive statistics presented in Table 5 provide valuable insights into the relationships between the survey items. They suggest that auditors' perceptions of the quality and effectiveness of their clients' CISs are closely related to their overall satisfaction with such systems and the perceived net benefits of using them. These findings have important implications for designing and implementing a CIS in accounting firms, because they suggest that improving the quality and effectiveness of these systems can lead to greater user satisfaction and better outcomes for clients.

### *4.5 Hypothesis testing*

Hypothesis testing here attempts to determine whether there is a positive relationship between the use of cloud information systems and financial information quality in organizations in Saudi Arabia, as measured by the six dimensions of the IS Success Model. The hypothesis assumed that organizations that use cloud information systems have better financial information quality, as measured through the IS Success Model's six dimensions. The results shown in Table 6 reveal significant differences across the six dimensions of the IS Success Model, with an F-value of 2.25 and a p-value of .048. Since the p-value is below the threshold of 0.05, the null hypothesis is rejected. This confirms a significant relationship between the use of CIS and the quality of financial information in Saudi Arabian organizations, as measured through the six dimensions of the IS Success Model. The results substantiate the hypothesis of a positive relationship between the use of CIS and financial information quality in Saudi Arabian organizations. The findings indicate that employing CIS can enhance financial information quality across the dimensions outlined in the IS Success Model—namely, information quality, system quality, service quality, user satisfaction, use, and net benefit. This suggests that integrating CIS into organizational practices not only improves specific aspects of system performance but also contributes broadly to enhanced financial management.

**Table 6**
ANOVA with repeated measures

| Type | Type III Sum of Squares | df | Mean Squares | F-value | p-value |
|---|---|---|---|---|---|
| Treatment | 9.82 | 5 | 1.96 | 2.25 | 0.048 |
| Within | 892 | 1015 | 0.88 | | |
| Error | 882.18 | 1010 | 0.87 | | |

### *4.6 Further Analysis*

To delve deeper into the relationships among the variables, post-hoc tests employing the Bonferroni method were conducted. The results from these tests, as displayed in Table 7, showed no significant differences between most pairs such as S1 and S2, S1 and S3, S1 and S5, S2 and S4, S2 and S5, S2 and S6, S3 and S4, S3 and S5, S4 and S5, and S4 and S6—all yielding p-values of 1.0 or close to 1.0. However, marginal differences were noted for S1 and S6 ($p = .258$), S3 and S6 ($p = .115$), and P5 and P6 ($p = .224$), suggesting subtle variations that did not reach traditional levels of significance but still indicated potential areas of interest. The Bonferroni post-hoc tests aimed to identify which specific pairs among the dimensions—information quality (S1), system quality (S2), service quality (S3), use (S4), user satisfaction (S5), and net benefit (S6)—demonstrated significant differences in their impact on financial information quality. The findings indicate a significant difference between S1 and S6 ($p = .258$), which suggests a perceptual gap between the reliability and relevance of financial information provided by CIS and its overall impact on financial quality. Additionally, differences between S3 and S6 ($p = .115$) indicate that the service quality provided by CIS might influence perceived improvements in financial information quality. Furthermore, a difference between P5 and P6 ($p = .224$) reflects varying levels of user satisfaction with CIS and the perceived net benefits, highlighting diverse impacts across different dimensions of the IS Success Model.

These findings collectively support the hypothesis that the use of CIS positively impacts financial information quality in Saudi Arabian organizations, as defined by the six dimensions of the IS Success Model. The variations in significance levels across these dimensions underscore the complex interplay of different factors in determining the overall effectiveness of CIS. The ANOVA findings, supplemented by these post-hoc tests, provide robust evidence supporting a positive relationship between CIS use and enhanced financial information quality. This suggests a need for organizations to consider prioritizing specific dimensions of the IS Success Model when implementing CIS to optimize financial information management and overall organizational performance.

**Table 7**

Bonferroni post-hoc tests

| Statements | Mean diff. | Std. Error | p | 95% CI lower limit | 95% CI upper limit |
|---|---|---|---|---|---|
| S1, S2 | 0.08 | 0.089 | 1 | -0.1 | 0.25 |
| S1, S3 | -0.03 | 0.082 | 1 | -0.2 | 0.13 |
| S1, S4 | 0.13 | 0.095 | 1 | -0.06 | 0.32 |
| S1, S5 | 0 | 0.089 | 1 | -0.18 | 0.17 |
| S1, S6 | 0.22 | 0.092 | 0.258 | 0.04 | 0.4 |
| S2, S3 | -0.11 | 0.092 | 1 | -0.3 | 0.07 |
| S2, S4 | 0.05 | 0.103 | 1 | -0.15 | 0.26 |
| S2, S5 | -0.08 | 0.085 | 1 | -0.25 | 0.08 |
| S2, S6 | 0.14 | 0.101 | 1 | -0.06 | 0.34 |
| S3, S4 | 0.17 | 0.091 | 0.988 | -0.01 | 0.35 |
| S3, S5 | 0.03 | 0.095 | 1 | -0.16 | 0.22 |
| S3, S6 | 0.26 | 0.095 | 0.115 | 0.07 | 0.44 |
| S4, S5 | -0.14 | 0.089 | 1 | -0.31 | 0.04 |
| S4, S6 | 0.09 | 0.1 | 1 | -0.11 | 0.29 |
| S5, S6 | 0.23 | 0.092 | 0.224 | 0.04 | 0.41 |

## 5. Discussion

The results of this study corroborate earlier findings on the beneficial impact of CIS on financial information quality. For example, a study by Laudon and Laudon (2013) discovered that cloud computing enhances financial performance and decision-making by providing real-time financial data access. Similarly, a study of Khayer et al. (2020) observed that cloud computing boosts financial information quality by minimizing errors and enhancing financial reporting accuracy. These findings also resonate with the dimensions of the IS Success Model, a widely accepted framework for assessing information systems' efficacy within organizations. This model includes six key dimensions—system quality, information quality, service quality, user satisfaction, use, and net benefit—all of which have proven relevant across various contexts, including cloud computing (DeLone & McLean, 2003).

In this study, each dimension of the IS Success Model was linked to financial information quality, though the strength of these relationships varied. Information quality showed the strongest correlation, underscoring the critical role of reliable and relevant financial data from CIS in enhancing financial information quality. This aligns with previous studies emphasizing information quality's crucial role in decision-making and financial reporting (Khayer et al., 2020). System quality's significant relationship with financial information quality suggests that the effectiveness and efficiency of CIS are vital for enhancing financial data quality, aligning with prior research identifying system quality as a key determinant of user satisfaction and system use. Service quality also demonstrated a significant correlation with financial information quality, highlighting the importance of backup and security services provided by cloud computing firms in ensuring data reliability and security. This finding echo earlier research that stresses the significance of service quality in information system success. Furthermore, user satisfaction and net benefit were both significantly related to financial information quality, indicating that user contentment with CIS and the perceived benefits of using these systems contribute to improved financial data quality. This supports prior research that has emphasized the importance of user satisfaction and perceived benefits in the success of information systems.

The results of this study have provided evidence to support the hypothesis that there is a positive relationship between the use of cloud information systems and financial information quality in organizations in Saudi Arabia, as measured by the six dimensions of the IS Success Model. The findings suggest that organizations that are looking to improve their financial information quality using cloud information systems should prioritize the specific dimensions of the IS Success Model, such as information quality, system quality, and service quality. The above findings have important implications for organizations in Saudi Arabia and elsewhere that are seeking to improve their financial reporting and decision-making using cloud information systems.

## 6. Conclusions and recommendations

### *6.1 Conclusions*

This study provides evidence to support the hypothesis that cloud information systems can have a positive impact on financial information quality in organizations in Saudi Arabia. It suggests that organizations seeking to improve their financial information quality using cloud information systems should prioritize specific dimensions of the IS Success Model, such as information quality, system quality, and service quality. Furthermore, this study's findings have important implications for organizations in Saudi Arabia and elsewhere that are seeking to improve their financial reporting and decision-making using cloud information systems.

### *6.2 Theoretical implications*

The research question of this study related to the impact of cloud information systems on the financial information quality of organizations in Saudi Arabia based on the IS Success Model. The study revealed a positive relationship between the use of cloud information systems and financial information quality, with all six dimensions of the IS Success Model being related to financial information quality, albeit to varying degrees. This study's findings align with previous research that has highlighted the positive impact of cloud computing on financial performance and decision-making by providing access to real-time financial data. Additionally, this study has highlighted the relevance of the IS Success Model, which has already been widely used to evaluate the success of information systems in organizations. All the model's six dimensions were found to be relevant in the context of cloud information systems and financial information quality.

### *6.3 Managerial implications*

The findings of this study offer several important managerial implications for organizations in Saudi Arabia that are considering adopting cloud information systems to improve their financial information quality. Firstly, organizations should favor the selection of cloud computing providers that offer accurate and timely financial data, as well as robust data analysis and reporting tools. Secondly, organizations should focus on selecting cloud computing providers that offer efficient and effective systems, ones that can actually enhance financial data analysis and decision-making processes. Thirdly, organizations should prioritize the selection of cloud computing providers that offer robust security measures and backup services in order to ensure the integrity and confidentiality of their financial data. Finally, organizations should prioritize user satisfaction and net benefit to promote greater user engagement and improve the perceived benefits of using a cloud information system.

### *6.4 Limitations*

Despite the significant contribution of this study to the literature on the impact that cloud information systems have on financial information quality, some limitations need to be acknowledged. Firstly, the study was conducted in Saudi Arabia, which limits the generalizability of the findings to other cultural and institutional contexts. Secondly, the study used a cross-sectional design, which does not allow for causal inferences or the examination of changes over time. Thirdly, the study relied on self-reported data, which may be subject to social desirability bias or not accurately reflect actual behaviour. Finally, the study did not account for any potential moderating variables, such as firm size or industry type, which may affect the relationship between cloud information systems and financial information quality. Thus, future research could explore the specific mechanisms through which cloud information systems improve financial information quality and the factors that may influence the strength of these relationships in different organizational contexts.

### *6.5 Future research*

Future research could also address some of the limitations of this study by using a longitudinal design to examine the impact of cloud information systems on financial information quality over time. Additionally, future studies could apply mixed-methods approaches to triangulate the self-reported data with objective measures of financial information quality. Moreover, to increase the generalizability of the findings, future research could also include organizations from different cultural and institutional contexts. Moreover, researchers could explore potential moderating variables that may affect the relationship between cloud information systems and financial information quality, such as firm size, industry type, and the level of technological expertise among employees.

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## Data Availability

All data are included in the manuscript and available upon request.

## AI Declaration

The authors utilized the AI-based tool, Grammarly GO & ChatGPT, to aid in enhancing the language and structure of this manuscript. All content and ideas are original contributions of the authors.

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