



NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF BANKING AND ACCOUNTING

**THE IMPACT OF USING ACCOUNTING INFORMATION SYSTEMS ON
THE QUALITY OF FINANCIAL DATA OF ISLAMIC BANKS**

M.Sc. THESIS

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Nicosia

January, 2022

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MASTER THESIS

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Approval

We certify that we have read the thesis submitted by ISSA LUQMAN JALIL titled **“The Impact of Using Accounting Information Systems on the Quality of Financial Data of Islamic Banks”** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Banking and Accounting.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

ISSA LUQMAN JALIL

18/January/2022

Dedication

This study is dedicated to my family, brothers and sisters for their continued support.

I also want to express my gratitude to my friends for their assistance during the execution of this study.

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Abstract

The Impact of Using Accounting Information Systems on the Quality of Financial Data of Islamic Banks

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The study explores the impact of using accounting information systems on the quality of financial data to address contrasting and inadequate ideas of such concerns among Islamic banks. Thus, novel ideas were established using 210 bank employees' responses drawn from 7 Islamic banks in Erbil, Kurdistan that were analysed using SPSS 24. The effects and the magnitude of accounting information systems' effects between the model variables were analysed using regression analysis. The results of the study showed that accounting information systems inputs, security and reporting have positive effects on the quality of financial statements. The results also showed that accounting Information systems processes have a negative effect on the quality of financial statements. The study has successfully managed to address the given research problems and plays an important role in developing practical solutions leading to improvements in the use and role of financial and accounting data in banks. The study provides novel ideas regarding the connection between AIS reporting the quality of reported financial results shown to be negative. As a result, this leads to solutions being sought by banks as to why and how such a negative connection exists. Such novel ideas have been lacking an empirical basis relating to the banking situation in Erbil, Kurdistan.

Key words: AIS, AIS inputs, AIS reporting, AIS processing, AIS security.

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List of Abbreviations

AIS:	Accounting Information Systems
AISI:	Accounting Information Systems Inputs
AISP:	Accounting Information Systems Process
AISR:	Accounting Information Systems Reporting
AISS:	Accounting Information Systems Security
QFS:	Quality of Financial Statements
SPSS:	Statistical Package for Social Sciences

CHAPTER I

Introduction

Various innovative developments have been observed to have affected numerous business sectors and activities. One of the business activities that has benefited from such innovative developments is the accounting profession which has seen innovative developments in the form of accounting information systems (AIS) being introduced (Gel, 2010). The introduction of AIS is greatly considered to have addressed various challenges affecting the transparency (Xu, 2003) and reliability of reported financial information (Wilkin & Tanya, 2003). Other studies pointed out that AIS has been instrumental in enhancing efficiency and effectiveness in the preparation and reporting of financial information (Rapina, 2014).

With the high increases in corporate misconducts caused by traditional or manual accounting systems which made it difficult to trace transactions, the nature and significance of corporate scandals, errors and thefts were inevitably high (Ganyam & Ivungu, 2019). Thus, the introduction of AIS was viewed as instrumental in dealing with these challenges.

Banks have been notable organisations that were affected by financial statements preparation methods. As a result, bank officials and monetary authorities advocated for the implementation of AIS to enhance the quality of financial statements (Xu, 2003). However, studies on AIS are highly common focused on conventional banks (Al-Dalabih 2018; Ali, 2011, Porter & Norton, 2011), and little has been done to extend them to Islamic banks. This comes in the wake of Islamic banks adopting similar innovative systems to enhance the quality of their financial statements, transparency, reliability and rational use (Ganyam & Ivungu, 2019), especially in the Kurdistan Region of Iraq. This study proposes to examine the impact of the use of accounting information systems on the quality of financial data of Islamic banks in Erbil, Kurdistan Region of Iraq.

Research Problem

Studies that examine the impact of the use of accounting information systems on the quality of financial data are highly confined to conventional banks (Al-Dalabih

2018; Hutahayan, 2020; Porter & Norton, 2011). Little has been done to examine similar developments in the context of Islamic banks. Moreover, a study by Al-Dalabih (2018) considers AIS to affect the quality of financial statements through changes in AIS inputs and security. However, theoretical insights consider these effects to be in four distinct aspects (Al-Wattar, Almagtome & AL-Shafeay, 2019; Porter & Norton, 2011). Thus, the study proposes to include the other two aspects and analyse how they influence the quality of Islamic banks' financial statements. Furthermore, studies that examine this issue are confined to countries like the United States of America (Porter & Norton, 2011), Jordan (Al-Dalabih 2018) and China (Xu, 2003). Little has been done to the extent these studies to countries like the Kurdistan Region of Iraq. This study, therefore, seeks to examine the impact of the use of accounting information systems on the quality of financial data of Islamic banks.

Research Objectives

The study's main emphasis is to examine the impact of the use of accounting information systems on the quality of financial data of Islamic banks. Such was done by examining how AIS through changes in its inputs, security, processes and reports affects the quality of financial statements. As such, the study proposes the following hypotheses to be able to find answers related to such impacts;

- **H₁**: Accounting Information systems inputs has a positive effect on the quality of financial statements inputs.
- **H₂**: Accounting Information systems security has a positive effect on the quality of financial statements inputs.
- **H₃**: Accounting Information systems processes has a positive effect on the quality of financial statements.
- **H₄**: Accounting Information systems reports has a positive effect on the quality of financial statements.

Significance and Justification of the Study

The novelty and originality of this study are to document both impacts of the use of accounting information systems on Islamic banks' quality of financial data. Moreover, the AIS is considered to enhance the quality of financial data through inputs, security, processes and reporting aspects (Al-Dalabih 2018; Al-Waeli et al.,

2020; Flayyih, Mohammed & Talab, 2019; Porter & Norton, 2011). Therefore, this study combines these insights to analyse the Islamic banks' situation in the Kurdistan Region of Iraq. The focus of the study is to draw ideas from a cross-section of various Islamic banks in the Kurdistan Region of Iraq. The study is important because it improves understanding in the area of accounting information systems and the quality of financial data using models that apply to the entire banking sector. It also contributes towards developing theoretical insights that can be used to deal with problems caused by structural issues experienced all over the world.

The study improves understanding regarding the impact of using an accounting information system on the quality of Islamic banks' financial statements. It is also important for providing information that can be used to model a conceptual framework capable of analysing the effects of structural problems like those caused by accounting information systems and how they affect the performance of Islamic banks. The results are important for providing suggestions on how to benefit, fully utilise and take advantage of the benefits of accounting information systems to enhance the quality of their financial statements.

CHAPTER II

Literature Review

This chapter offers theoretical and empirical backgrounds related to accounting information systems and how it influences the quality of information produced by banks. This chapter aims to explore study gaps and create a channel through which study findings were examined.

Theoretical Framework

There are vast theoretical frameworks linked to Accounting Information System (AIS) and used to determine its effects on the quality of financial reporting. Each of the theoretical frameworks addresses specific factors that are essential for broadening the study's focus and hence, this study applied the diffusion innovation theory and the contingency theory. This is because they assist in analysing the motives of adopting technology and information systems, provide conditions under which they can be adopted and gives details about how to design and structure AIS in organisations by taking into consideration the organisation's structure and environmental factors, which are vital keys to improving the quality of financial reporting.

Foremost, the adoption of AIS by an organisation and its role in improving the quality of financial reporting is best described and analysed using the diffusion innovation theory. Foremost, Rogers regards technology as hardware and software that is instrumental for reducing uncertainty about the cause and effect connections influencing the required organisational outcomes (Kaminski, 2011). However, both hard and software are further presumed to have different adoption rates with the former having a higher absorption rate compared to the latter (Dearing, 2009). That is, adoption refers to the decision to fully utilise the innovative technology or system as the best desirable course of action to achieve the required outcomes. Given such circumstances, organisations adopting AIS consider it as the best alternative compared to other previous or existing information systems. By definition, AIS refers to a structural system used by businesses uses to collect, store, manage, process, retrieve, and report their financial data to make informed decisions (Nzomo, 2013). This definition shows the innovative concerns or possible motives of adopting AIS in

business. Notably, it entails that organisations are motivated to adopt AIS so as to innovate their data collection, storage, management, processing, retrieving, and reporting activities with an aim of enhancing efficiency and effectiveness in making well improved and rational decisions. This aligns with suggestions outlining that the adoption of AIS is an innovative shift away from traditional accounting systems (Lundblad, 2003). A study by Sanson-Fisher (2004) also mentions similar aspects and regards AIS as more effective and efficient compared to traditional accounting systems. The adoption and diffusion of AIS in an organisation can be analysed in the context of the following aspects suggested by Kaminski (2011);

Innovation refers to a new project, practice and idea (Kaminski, 2011). Such a definition implies that AIS is a new system and its adoption serves to improve certain existing business practices and systems. Traditional and manual accounting systems are connected to inherent data inputting, storage, processing and reporting issues that required innovative solutions to enhance effectiveness and efficiency in reporting the business' performance and position. Therefore, AIS is an innovative computerised accounting system that uses well-advanced programs to input, store, process and reports financial information. Such innovative changes are called for in modern business situations and environments where businesses strive to enhance their capacity to earn more revenue and minimise both time and costs. Rosli, Yeow and Eu-Gen (2013) contends that contemporary business situations are now excessively expensive to operate in and thus, making it uncondusive for businesses to operate. As a result, AIS can be used as an innovative system that provides information regarding such activities and issues.

The diffusion innovation theory considers AIS as capable of diffusing in an organisation (Kaminski, 2011). However, it is of great importance to analyse circumstances under which AIS can be diffused, especially in modern business situations. Diffusion represents acceptance and entails that organisational members have accepted the new system together with its inherent problems and challenges. Yigitbasioglu (2015) contends that AIS the benefits of AIS are weighed against their costs and that its acceptance entails that AIS offers more befits compared to its associated costs and challenges. This can be supported by O'Donnell's (2010) study highlighting the positive changes in organisational performance, strategy and management attributed to the adoption of AIS. This can also be backed up by other

studies contending that the utilisation of organisational resources and shareholders' funds are positively linked to AIS (Rosli, Yeow & Eu-Gene, 2013). Such insights significantly provide evidence in support of the idea that organisations are much inclined to adopt new technological systems offering them considerable benefits linked to effectiveness, efficiency and sound improvements in their performance positions.

Technological developments are always at the backdrop of an increase in costs and a lack of effectiveness (Dearing, 2009). Hence, the adoption and innovation of technology and information systems represent a major solution that can be applied to address such challenges. Therefore, the DIT reckons that new technology and systems are adopted in organisations as part of solutions to dealing with issues affecting the organisation (Lins, Teigeler & Sunyaev, 2016).

Innovative improvements in computerised accounting are essential as organisations strive to deal with new and sophisticated methods involving fraud and other scams affecting organisations. With examples like the Enron Saga being given, the importance of having effective accounting and auditing systems is significantly justifiable. Corporate governance measures enacted during and after the Enron Saga are much in support of having advanced and innovative accounting systems capable of detecting fraud (Yigitbasioglu, 2015). This was also further necessitated by the need to enhance operational transparency in the management of the organisation and disclosure of information. Organisational managers and employees are bound to manipulate information for their benefit or gain. Thus, the development of computerised systems like AIS serves to detect such mismanagement and fraudulent activities and ensures that the organisation's image and operational capacity are not compromised.

In other cases, innovative technological systems like AIS are highly called for and hence, their implementation serves to fulfil specific functions giving the organisation a significant competitive edge over its competitors. For instance, Lins, Teigeler and Sunyaev (2016) contend that AIS possesses special functions that allow its users to compute certain market and industry indicators relative to the organisation's competitive position. Other goals like growth, proper and effective management of the organisation are also influenced by the availability of innovative

systems. Moreover, both costs minimisation and revenue maximisation strategies are influenced by the availability of innovative systems like AIS. Thus, according to the DIT, AIS is a necessary form of innovation that aids in improving effectiveness and efficiency in organisations.

Accounting Information Systems

Fakhimuddin (2018) defined an accounting information system as a system comprising of accounting program software and financial data working towards storing, processing and communicating financial information. Flayyih, Mohammed and Talab, (2019) regard AIS to be an accounting data inputting, storing, processing and reporting program used by businesses to calculate certain financial indicators, prepare financial statements and report the established findings. These two definitions depict that AIS works towards targeting four vital aspects related to data inputting, storing, processing and reporting. Such aspects are considered to be one of the key reasons why there was a huge need to introduce innovative systems like AIS. For instance, Kanakriyah,R.(2016) contends that were significant data inputting limitations caused by the use of manual accounting systems. That is, manual data entry systems are time-consuming and chances of making errors that would take time to identify and rectify will be high. Furthermore, manual accounting systems would make it difficult to store and retrieve financial information (Turner et al., 2020). Concerns about the significant amount of processing time used by manual systems were also another pressing issue that pushed for the development and adoption of computerised accounting systems (Kanakriyah,R 2016).

Meanwhile, AIS has inherent components that it uses to make accounting systems capable of storing and processing information and creating reports. All these components work together to fulfil certain important functions linked to decision making. A study by Kanakriyah,R (2016) considers AIS as composed of users of the financial information who include auditors, senior financial officials, managers, business analysts, consultants, and accountants. Thus, making AIS a system that is composed of collective interests of various professionals that focuses on improving the quality of their decisions. However, this can also suggest that information stored using AIS limits access to financial information to certain individuals until confirmation has been given. Bachmid (2016) outlines that AIS follows either specific

automatic or manual or both procedures and instructions in collecting, storing, retrieving and processing information. Such procedures and instructions play vital accounting auditing roles in as much as data timing, security, reliability and relevance are concerned. Financial data is another component making up AIS and such data is collected from the organisation's operational activities. The information is processed and presented in an easily readable and understandable format allowing various users to decipher the performance and condition of the business.

AIS contains data collected from various financial activities undertaken by the organisation. Examples include data on expenses, revenue, creditors, debtors, assets, liabilities and capital. These distinct aspects of financial statements entail that AIS is capable of analysing information according to the specific users' needs and interests. Sari, Afifah, Susanto and Sueb (2019) assert that AIS caters for various organisational activities as reflected by sales orders, purchase orders, seller bills, tax information, time setting, payroll information, stock data, general ledger, check records, seller bills, etc., details captured by AIS.

It remains imperative that AIS is a computer program that uses financial data for accounting purposes aimed at making informed decisions. Such can be supported by related suggestions by Uyar et al (2017) regarding AIS as being defined by its capacity and function to collect and store accounting and financial data to assist internal users, investors, creditors and tax officials in making informed decisions about the organisation.

Meanwhile, the adoption of AIS is presumed to have been motivated by concerns to improve internal operations (Fitrios, 2016). Studies consider that organisations' internal operations have been riddled with various problems such as inefficiency and ineffectiveness of the use of organisational resources (Al- Hawari, 2016; Schroeder et al., 2001)

Trigo et al (2016) noted that the prevalence of errors made using traditional or other manual accounting systems was relatively high. Hence, the development of special accounting programs with vital features restricting errors was called. Errors hinder decision-makers from making informed decisions and this undermines both employee performance and organisational performance. Investors' approach towards

the organisation will be affected while other stakeholders are also likely to assume and adopt biased approaches towards the organisation. Thus, AIS serves to address these concerns by making sure that correct financial information is inputted and processed for decision-making related activities.

Mismanagement is a common problem affecting the organisation. Efforts to curb such a problem are also linked to the development of AIS. This is because studies presume that AIS shows specific information about the organisation's operational activities (Li, Lytvynenko and Philippoff (2021). Such information can be used to gauge the organisation's performance and assess whether it is meeting stated goals. Moreover, managers' actions can be regulated using the provided financial details. Kothari (2019) mentioned the importance of dealing with fraud and cited that AIS records and reports are the keys to which organisations can prevent fraud. Besides, AIS is not only associated with accounting needs but also includes other vital auditing benefits that are obtainable through the analysis of the provided reports.

Rising stakeholders concerns have also been given as a major concern that drove accountants and IT developers to come up with effective computerised accounting systems (Uyar, Gungormus & Kuzey, 2017). This is because management was viewed as focusing on their interests and neglecting shareholders' interests (Gamayuni & Dewi, 2018). This situation is reflected by the principle agent problem and results in the low returns being given to the shareholders. Thus, AIS is a tool that was used to analyse managers' performance to use the organisation's assets to generate revenue and generate revenue using the shareholders' funds. Thus, AIS can be said to provide a means through which managers' interests are aligned with the shareholders' interests.

There are studies linking the development of AIS to Corporate social responsibility. For instance, Bachmid (2016) contends that AIS provides specific information highlighted by the financial statements indicators concerning the organisation's approach towards its social responsibilities. Such responsibilities to individuals in the same organisations like employees, creditors and companies must be met and failure to meet such obligations has adverse effects on the performance of the organisation. CSR also caters for the organisation's approach towards protecting

the environment in which it is operating. Contemporary financial statements include measures of CSR and can compute an organisation's CSR performance.

The above-examined details show that AIS' adoption in an organisation is an innovative procedure that has managed to deal with various concerns affecting the organisations. Besides, its adoption has been playing a vital role in improving organisational tasks and operational performance. AIS still continues to play roles in contemporary business situations as it is now being used for various activities like forecasting, competitive analysis and strategic management. However, all these functions will serve to influence the quality of decisions made using the reported financial details. Such reports are communicated within and outside the organisations to keep users of financial statements well informed of the organisation's activities, position and operational performance.

The Significance of AIS Programs in Business

AIS is vital for enhancing efficiency in business operations and effectiveness in the formulation of decisions. Just like any information and technology system, AIS is designed to improve information inputting, storage, processing and reporting. Such aspects are essential for businesses to use the processed information to obtain an accurate description of the business' operational activities. Studies noted that organisations with effective information systems are highly posed to make rational decisions and in most cases, they are characterised by high-performance levels (Ahmad & Al-Shbiel, 2019; Ganyam & Ivungu, 2019). As such, AIS provides substantial and superior benefits compared to manual and other traditional accounting systems. The benefits of adopting are linked to various positive contributions that include easy processing and analysis of financial information (Al-Delawi & Ramo, 2020), retrieval of financial data (Sari, Afifah, Susanto & Sueb, 2019) and the facilitation of business activities (Nallareddy & Ogneva, 2017). Such benefits are similar to benefits that are presumed to be characterised by the increased use of accounting programs such as Sage's Sage 50 Accounting and Intuit's QuickBooks (Kwon, 2019). It is on the other hand substantially important to note that AIS and other accounting systems serve essential functions of enhancing the quality, reliability, and security of financial information. Such functions are supported arguments reiterating

the importance of shifting towards using computerised accounting systems (Al-Hattami & Kabra, 2019; Djanegara et al., 2018; Kwarteng & Aveh, 2018). Additionally, this is believed to play an essential role in improving the quality of formulated decisions (Al-Hattami & Kabra, 2019; Horvat & Mojzer, 2019; Sari, Afifah, Susanto & Sueb, 2019). Nevertheless, there are other essential and contemporary functions that AIS serves to perform and these include the predictive value, feedback, timeline, credibility and relevance functions that are discussed as follows;

Predictive value is the value derived by the organisation from using accounting systems to predict or forecast financial outcomes (Kwon, 2019). Such a value is of huge importance in businesses as it assists them in planning and making provisions ensuring that the business is on the right path. The importance of forecasting in business is widely documented in academic studies and it is suggested that this plays a vital role in guarding against unforeseeable outcomes (Nallareddy & Ogneva, 2017) as well as protecting the business from severe competitive pressure (Sari, Afifah, Susanto & Sueb, 2019). Moreover, forecasting is another essential way of confirming managers and investors' expectations about the business' performance and future conditions (Al-Hattami & Kabra, 2019). All these benefits are releasable through the adoption of AIS.

Feedback is essential for analysing the type and quality of financial information that has been provided and it is recommended for businesses to have accounting systems that are capable of providing feedback (Horvat & Mojzer, 2019). A study by Al-Hattami and Kabra (2019) highlights that feedback can also be used again to confirm managers and investors' expectations about the business' performance and future conditions, and thus, widening the use and influence of AIS in business. Besides, the continued survival and operation of the business relies on the information that is provided indicating as to whether the business is sufficiently funded (Ganyam & Ivungu, 2019), making enough profits (Aldegis, 2018), has enough assets (Djanegara et al., 2018) and well liquidated (Almasria et al., 2021). In addition, the ability of the business to adapt to constantly changing business and economic conditions rely on the quality of the information provided as feedback. Thus, it is crucial to have accounting systems capable of providing feedback as it enhances the appropriateness of the information in formulating rational decisions.

Time line is considered to be a valuable aspect of accounting systems that assists in ensuring that relevant decisions are made at the right time (Horvat & Mojzer, 2019). Further suggestions given by Darrough and Deng (2019) denote that AIS is pivotal for ensuring that both current and future business decisions made by either creditors, investors or organisational managers continue to remain relevant and effective. According to Massicotte and Henri (2021), timing is an essential business aspect that businesses must pay considerable attention to if they are to remain operational, relevant and effective. Besides, aspects like profitability and competitiveness are also linked to proper timing (Darrough & Deng, 2019). Thus, the adoption of AIS enables businesses to report their financial results and make rational decisions at the right time. However, according to Darrough and Deng (2019), timeline decisions related to the use of AIS are influenced by the following aspects:

- 1) The speed at which accurate information is provided is of vital importance because information must be provided at the right time to make decisions promptly. Delays in relaying information have been known to pose costly decisions undermining effectiveness and performance (Ganyam & Ivungu, 2019). Time is of huge essence in business, especially for banks. Studies reckon that certain decisions and actions have to be taken before competitors respond to market or industry situations (Al-Hattami & Kabra, 2019; Ganyam & Ivungu, 2019). This entails that banks that can access information timely and make the necessary decisions on time can take advantage of existing opportunities before competitors respond. Besides, information must be easily available to avoid delays and the undesired effects that can hinder productivity. Darrough and Deng (2019) contend that the value of information is significantly linked to the amount of time required to process, communicate and use it to make decisions. Such observations reveal; crucial aspects of AIS and any improvements in AIS must be aimed at improving these aspects if the value of the information provided using AIS is to contribute significantly to the quality of reported financial information. Moreover, it is costly for businesses to fail to access information on time. The related effects of failing to access information on time range from loss in revenue, market share, customer dissatisfaction, to poor performance. Hence, using accounting systems like AIS can play a vital role in ensuring that information is readily available and easily accessed on time to allow managers to make decisions and respond to organisational, market

and industry situations. All these aspects were attached to value (Djanegara et al., 2018). This aligns with propositions given by Darrough and Deng (2019) suggesting that efforts avoid information losing its value require timeous provision or exchange of information between employees or branches and departments. There are relatively significant suggestions linking delays in relaying information to a lack of accuracy (Almasria et al., 2021). Such insights imply that inaccurate decisions or steps can be taken when managers are forced to make decisions and devise information amid insufficient information availability. That is, providing information timely allows managers to avoid making irrational and ineffective and costly strategies that are misinformed. Additionally, this shows that sufficient information helps to guide managers and decision-makers towards having accurate and reliable insight into the business and the possibly required strategies to achieve the stated organisational goals and objectives.

- 2) Contemporary business situations are getting more complex each day, month, year and season. Hence, the provision of accurate information becomes of huge significance. Studies have been highlighting that AIS are desirable in filling gaps in information availability, reliability and accuracy (Al-Hattami & Kabra, 2019; Horvat & Mojzer, 2019; Sari et al., 2019). One of the reasons for having access to accurate and reliable information is that it helps organisational managers to remain abreast of the activities and changes taking place in the organisations.

Given that AIS uses monetary figures to depict organisational activities, AIS is vital for controlling the use of both financial and material resources used by the organisation to ensure that it effectively and efficiently achieve its goals. As a result, there are vast strategies connected to AIS and the amount, significance and value of information about the organisation it relays. For instance, human resources strategies are sometimes formulated based on information provided regarding the available human manpower, required targets, set goals and budgets as well as performance. In this way, organisations can use AIS supplied information to decide on the number of employees to be recruited, how employees are to be organised, determine if employees require motivation, training and development etc. moreover, marketing strategies can also be devised from a set of AIS supplied information. For instance, Ganyam and Ivungu (2019) contend that organisational sales and recorded customer figures can be reflected on the organisation's financial statements computed using

AIS. Consequently, such details will be utilised in devising strategies to boost sales and revenue through a series of marketing, advertising and promotional strategies.

Investment decisions can also be devised from AIS supplied records as investors can use the supplied information to conduct investment and financial analysis decisions regarding the organisation's financial stability, liquidity and capitalisation. Such actions incorporate the use of various financial statements like balance sheets, cash flows, income statements etc. In another study, growth and development exercises were linked to the quality of internally available information (Kwon, 2019). However, the challenge is that the information was not directly connected to AIS. Nevertheless, such observation can entail that AIS provided information can also be used for such tasks. For instance, organisations can decide as to whether they have to develop existing or new products and markets by using internal information. All these uses of AIS do not specifically entail that AIS has its own inherent limitations. Hence, noting that such limitations exist becomes the key through which organisations can make rational decisions warranting sound performance, competitiveness, growth and development. Problems such as failure to capture the non-financial aspects of the business have been (Horvat & Mojzer, 2019) and still (Ahmad & Al-Shbiel, 2019) remain a considerable issue undermining the effectiveness of AIS. For instance, it is practically impossible to use AIS to measure customers' perceptions, attitudes, behaviour and thoughts using AIS. This is because such information is influenced by an individual's reaction and thinking capacity about certain aspects or courses of action whose value and reported effects cannot be quantified in monetary terms. Nevertheless, the regular submission of reports at the appropriate time allows decision-makers to be well informed and updated on organisational activities and situations.

Credibility becomes vital as organisations are constantly under pressure from managers, stakeholders, shareholders and other parties to provide credible information about the business' activities. Credible information is information that is presented faithfully, neutral and impartial, and verifiable (Hassan & Haque, 2017). It is essential to note that various organisational activities are influenced by the level and nature of credible information the organisation disperses out. Studies recommend that credibility forms and plays a key role in auditing and corporate governance matters and emphasis that published information must be credible at all times (Hassan & Haque, 2017; Palazuelos, Crespo & Del Corte, 2018). Moreover, lack of credible

information hinders the quality of formulated decisions and stands as a major obstacle against the enhancement of the business' competitive position.

Relevance deals with the extent to which information matches the existing business, economic and other situations (Ahmad & Al-Shbiel, 2019). There are considerable suggestions emphasising the need and importance of ensuring that financial information remains relevant for making informed business decisions. For instance, Al-Hattami and Kabra (2019) contend that end-users of financial information will find it difficult to make informed decisions when they lack access to relevant information. In addition, Al-Hattami and Kabra (2019) assert that relevance can be related to the usefulness of financial information in decision-making processes. That is, any information that does not add value to the decision-making processes is irrelevant. Al-Hattami and Kabra further preceded to highlight that relevant information possesses three vital timing, feedback, and predictive value features.

The vitality of such aspects is instrumental for improving the effectiveness and time of decisions made. Both the timing and relevance of the information published using AIS is highly enhanced when AIS is implemented. Hence, it is instrumental to adopt and innovate AIS to enhance operational effectiveness, performance and other business outcomes.

Vital AIS Procedures and Instructions Essential for Improving Financial Reporting Quality

AIS through its adoption serves to fulfil certain vital aspects that are crucial for organisations to operate and survive. Since its inception, AIS has been instrumental in meeting organisations' information and decision-making needs. Studies on AIS do provide significant empirical backing supporting such ideas. For instance, Li, Lytvynenko and Philippoff (2021), AIS offers detailed insights into the procedures that must be followed in order to enhance information security. Such benefits entail that accounting systems are not only designed to store, process and report financial information but also serves to provide other inherent benefits desired by an organisation. Relating such benefits to auditing, it can be viewed that this improved auditing goals as it secures information from manipulation and data theft. AIS now

contain improved data security features like biometric scans and encrypted passwords that prevent unauthorized users from gaining access to financial data.

Contemporary AIS contain modern and advanced information technology infrastructure allowing it to perform various functions and execute complex tasks. A study by Fakhimuddin (2018) outlined that the new IT infrastructure is fast and makes it possible for accountants and other users to process a huge amount of information within a short space of time. This aligns with propositions suggesting that time is an essential factor in decision-making that allows decisions to be made timely (Al-Hattami & Kabra, 2019), and ensures that they remain relevant to the time and situation at hand (Djanegara et al., 2018; Kwarteng & Aveh, 2018). Furthermore, such infrastructure is capable of combining various applications and thereby making it feasible to analyse and present the information using new and persuasive methods. Studies show that decision-making and other vital tasks are swiftly executed when information is presented in an understandable format and manner (Aldegis, 2018; Horvat & Mojzer, 2019).

Non-financial performance is not easily analysed and forecasted using financial performance and hence, business often relies on financial performance compared to non-financial performance. However, modern systems are developed using special functions and algorithms allowing projections to be made about the organisation's internal processes (Huerta & Jensen, 2017). Huerta and Jensen (2017) highlighted that non-financial indicators are essential for improvising, improving and directing internal operations as part of the strategic control process or exercise. Other aspects such as reputation, image, trust etc., can now be forecasted and analysed by using specific financial indicators in a way that they close reflect changes in those financial indicators. Studies are tracing such benefits to increased ability to integrate such indicators in determining non-financial aspects like manufacturing flexibility, Consumer satisfaction and loyalty, service or product reputation, etc., (Kwarteng & Aveh, 2018; Sari et al., 2019).

Nevertheless, the financial perspective remains an integral part of AIS and all the core aspects of AIS are centred on such a basis. AIS coupled with good decision-making and strategic analysis can lead to substantial improvements in organisational performance. Such benefits are widely evident in several academic studies (Aldegis,

2018; Horvat & Mojzer, 2019; Kwarteng & Aveh, 2018; Sari et al., 2019). Besides, contemporary studies are showing that AIS through its inert capabilities allowing businesses to maximise performance by regulating costs aids in enhancing the organisation's competitive position (Kwarteng & Aveh, 2018). On the other hand, The usage of resources within and outside the organisations can be effectively managed using information and reports produced using AIS. For instance, Kwarteng and Aveh (2018) noted that production methods and service delivery activities can be strategically arranged using AIS produced reports by changing the number of resources used in such activities. This is because organisations seek to use resources to produce goods and provide services in exchange for a profitable return allowing them to continue the production or provision processes. In addition, this can also be related to the organisation's ability to meet stipulated goals and targets so that shareholders and other stakeholders can have their interests met. All these aspects are linked to the amount of information processed and reported using AIS. Thus, AIS is instrumental for managing organisational performance and operations to ensure that they remain within or above satisfactory levels capable of guaranteeing continued operations and long-run profitability. Studies also connect AIS to risk management as it provides vital information regarding aspects like credit risk, financial risks, interests risk that must be controlled by the financial institutions to avoid collapse (Delawi & Ramo, 2020; Ganyam & Ivungu, 2019). Moreover, the importance of AIS in organisations is linked to marketing and advertising activities engaged by the organisations to increase sales revenue (Djanegara et al., 2018). AIS allows organisations to compute specific information that organisations can utilise to decide as to whether they will develop a new product or service, or even engage in market development exercises (Djanegara et al., 2018).

Though customer perspectives are difficult to establish and analyse using financial information, research has shown that financial information can be used to provide details about trends in customer activities (Djanegara et al., 2018). For instance, sales trends can be used to indicate as to whether customers are either still deriving enough satisfaction from consuming the organisation's products and services. This can therefore be used to ascertain those effects on other vital elements like customer loyalty. Additionally, customer relations programs and activities are also tied to customer satisfaction and loyalty examinations made by the organisation. Either

way, financial information remains an essential element that businesses rely on to make vital business decisions and projections. Thus, the absence or lack of financial information limits businesses from having an accurate description and insight into the behaviour, attitudes, and sentiments of their customers. Al-Wattar, Almagtome and AL-Shafeay (2019) reckon that financial information plays an instrumental role in assisting firms to conduct an external analysis of their markets and environment. Such analysis embraces numerous essential aspects and includes the adoption of several measures aimed at improving the operational capacity and performance of the business. These activities and strategies are formulated based on the information provided using AIS. Therefore, it becomes essential to consider AIS as vital for enhancing the operational capacity and performance of the business.

The act of using AIS in analysing internal operations cannot be neglected when matters of financial reporting quality are being discussed. Fakhimuddin (2018) asserts that AIS produces reports that allow organisations to draw various detailed insights about the organisation using numerous perspectives. Internal operations are the key to which organisations can make profits, grow and expand into other markets (Djanegara et al., 2018). According to Fakhimuddin (2018), organisations tend to rely on financial information to analyse their internal operations. Hence, costs can be monitored and regulated by simply analysing and projecting their trends. Additionally, similar aspects or insights can be drawn concerning revenue projections and maximisation. However, a core number of activities are being aligned with production activities and capacity levels, especially in manufacturing industries (Delawi & Ramo, 2020). All these insights denote that AIS serves to regulate activities and financial activities to ensure that they do not exceed certain levels and ensure that the business continues to operate profitably and efficiently by making effective use of its resources. Thus, the ideas provided in this section provide significant evidence of the importance of adopting AIS in organisations. The next section examines the role of AIS on systems quality on financial reporting.

Accounting systems like AIS have been riddled with issues that several studies consider are a stumbling block to its increased adoption in organisations (Al-Hattami & Kabra, 2019; Horvat & Mojzer, 2019; Sari et al., 2019). Lack of awareness is ranked as one of the top issues affecting the use of AIS in organisations (Djanegara et al., 2018; Kwarteng & Aveh, 2018). This is because most organisations and employees

are not usually aware of the existence, use and benefits of AIS. As such, they may be reluctant to adopt them. AIS can be linked or related to change and employees are known for resisting change, especially when such changes affect their interests. For instance, employees can consider AIS as replacing their jobs or forcing them to change their comfortable way of doing things (Horvat & Mojzer, 2019). In such cases, resisting the adoption of AIS will be viewed as the best adoptive way of securing their interests. Nevertheless, awareness stretches into various aspects and entails that both organisations and their employees must be aware of these AIS aspects. For instance, Darrrough and Deng (2019) assert that the adoption of AIS is meant to foster efficiency in organisations. Such arguments are levelled based on observations made depicting that AIS was designed with the main aim of dealing with shortfalls posed by traditional accounting systems (Al-Hattami & Kabra, 2019). Other studies highlight AIS' potency to enhance efficiency because its components require updates not inherent in previous accounting systems. Awareness can be related to other benefits that organisations stand to benefit from using AIS. This aligns with Al-Hattami and Kabra's (2019) study propositions denoting that AIS focuses on data storage, inputting, processing, security and reporting aspects that businesses confront significant and numerous challenges compromising their integrity and reputations. As a result, other vital organisational management principles like corporate governance are based on these inherent AIS targets or concepts. For example, Ganyam and Ivungu (2019) contend that fraud significantly hinders the success, reputation and image of the organisation. Hence, it is recommended that corporate governance measures should seek to improve data security and reporting to avoid such cases of fraud (Ahmad & Al-Shbiel, 2019). In addition, the effectiveness of both internal and external auditing relies on the availability of effective data storage, inputting, processing, security and reporting systems. That is, the bases are to ensure that information is well secured, can easily be processed, communicated and accessed for verification purposes. Auditors must be able to retrieve and verify the validity of all the required information. However, such awareness can be extended to other benefits that encompass having an accurate detail of the organisation and enhancing managers' ability to devise effective strategies required in ensuring that the organisation achieve its goals. The benefits obtained from enhancing awareness about AIS are numerous and they are documented in several studies (Al-Hattami & Kabra, 2019; Horvat & Mojzer, 2019; Sari et al., 2019). Given

such an issue, studies suggest that organisations must avail information to employees through various programs and activities aimed at improving awareness about AIS.

Lack of skills and knowledge is pointed to as another key issue affecting the adoption of AIS in organisations (Al-Delawi & Ramo, 2020). A study by Nallareddy and Ogneva (2017) notes that not all employees will be equipped to use AIS, especially at the time of its inception. This is because new accounting programs and systems contain new and to some extent complicated operational elements requiring employees to be taught and informed of such elements. There are other inherent challenges that are connected to the lack of AIS skills and knowledge. For instance, Sari et al. (2019) reckon that problems about the lack of AIS skills and knowledge require that organisations invest in training programs to equip them with the necessary abilities to use such systems. Furthermore, this also extends into improving their effectiveness in using AIS systems as the systems are usually updated on a yearly or seasonal basis. Training programs represent a significant cost that organisations may be reluctant to incur (Nallareddy & Ogneva, 2017). Hence, it is apparent to note that the lack of AIS skills and knowledge creates additional issues in the form of increased training costs that organisations must bear to ensure that their members are well equipped to use the adopted AIS. This can strain organisations like banks that are characterised by excessive costs undermining their operational capacity and performance (Horvat & Mojzer, 2019). However, it is relatively biased to consider the costs of adopting and using AIS in the form of training costs without considering the related benefits. This is because costs must be weighed against the potential benefits of adopting such a system. In some cases, the benefits can outweigh the costs while in others the incurred costs can outweigh the obtained benefits. These two distinct scenarios provide totally two different perspectives about AIS and are vital in deciding as to whether the bank should proceed to adopt AIS or abolish it. Nevertheless, studies undoubtedly demonstrate that several benefits stand to be obtained from adopting AIS, especially in contemporary business situations where ‘information is power’. Information is the basis on which organisation conduct their daily activities, manage and evaluate to determine their operational effectiveness and performance. Therefore, accounting systems like AIS that can aid organisations to possess such information are vital and encouraged to be adopted in organisations. Not to mention the decision making benefits that are obtainable from adopting AIS (Almasria et al., 2021). There is

substantial evidence supporting that AIS improves decisions making (Al-Hattami & Kabra, 2019; Horvat & Mojzer, 2019; Sari et al., 2019). Moreover, this study serves to illustrate that AIS improves the quality of reported financial details. In that regard, various quality measures are integrated and used to analyse the benefits of AIS. Examples like the correctness, reliability and authenticity of reported information are vital indicators of the quality of reported financial details (see Almasria et al., 2021; Djanegara et al., 2018; Massicotte & Henri, 2021). All these benefits must be considered and misguided actions can be taken when such perspectives are not incorporated in evaluating decisions to adopt AIS. Nevertheless, it remains important to note that adopting AIS is a welcomed decision and represents an innovative measure organisation must achieve as part of efforts to improve effectiveness, performance and the quality of reported financial details.

Not only costs are required in analysing challenges affecting the adoption and effective use of AIS in organisations. There are vast challenges differing in severity and amount of effort required to address them. Darrough and Deng (2019) identified that resources towards innovating AIS can be substantial, especially when the entire organisations significantly relies on AIS. Failure in one part of the system can cause the entire system to malfunction resulting in costly situations. As a result, a considerable amount of resources in the form of material and human resources must be immediately available to address such concerns in the event that they take place. Alternatively, the required material and human resources can also translate into costs and thereby adding a tool to the key challenges affecting the use of AIS in organisations.

There are also other essential ideas to consider when adopting AIS. Failure to consider such ideas can cause the organisation to be riddled with various complexities. For instance, Aldegis (2018) documents the importance of creating a conducive environment for fostering the effective adoption and use of AIS. This can be supported by related studies showing that the entire organisational activities if not, then most of the organisation's activities must be well-positioned to support and facilitate the effective use of AIS. Complexities will arise when they are limitations and incongruences among organisational activities and managers about the use of AIS. Organisational managers can have different perspectives and goals regarding the use and integration of AIS into their departments (Ahmad & Al-Shbiel, 2019). These

perspectives and goals must be aligned together with the organisational goals and made sure that they reinforce the effective use of AIS. Thus, any potential dissatisfaction or grievances arising from the conflicting interests and goals between organisational managers stands to compromise AIS' use and effectiveness. Al-Delawi and Ramo (2020) reinforce the idea to promote team unity and corporation citing that it is the key to achieving any stated goal. Additionally, the same study also notes that there are issues of gross inefficiencies capable of affecting organisations when its members and managers' interests and goals are perfectly aligned to support any adopted system like AIS.

Constant updates to cater for improvements in accounting standards are also another issue to reckon with and such an issue's effects are documented in academic studies. For instance, Al-Hattami and Kabra (2019) outline that accounting systems like AIS require that they be updated to cater for changes in accounting standards. Though changes in accounting standards are not frequently instituted, studies do voice their concern over such issues (Djanegara et al., 2018; Kwarteng & Aveh, 2018). It is imperatively clear that AIS must be designed to facilitate and enhance the organisation's ability to confine to the designated accounting standards. However, some studies argue that accounting systems like AIS serve to improve the inputting, storage, security, processing and reporting of information and not to ensure that organisation confine their accounting methods to the required accounting standards (Djanegara et al., 2018; Kwarteng & Aveh, 2018). As a result, there is considerable debate concerning the nature of AIS updates required to maintain its relevancy. On the contrary, some studies regard such updates as relating to the functions and the introduction of specific functions to cater for clients new demands (Almasria et al., 2021). Others cite that such updates related to the operating system must be constantly be updated to fix bugs affecting the effective use of AIS. Nevertheless, such updates constitute a part of costs that organisations can possibly consider as unnecessary or extensive and undermining their operational performance. But care is required in establishing that these updates are necessary and should not be a major concern as they are a common feature with any accounting and non-accounting system.

These arguments laid forth in this section of the study stand to indicate that there are obstacles standing a chance to hinder the use and effectiveness of AIS in organisations. As a result, this section has noted that these obstacles are either

internally or externally related and that organisations must take actions to address such issues. Moreover, this section has noted that the attainment of any AIS related goal together with the overall organisational goals can easily be restricted when such issues are in existence. Therefore, correction action is required and remains an important aspect that all organisations must assume and ensure that both organisational activities and resources are well organised to address such issues and support the effective use of AIS. Failure to address these challenges can be reflected in organisations through limitations imposed on AIS' effective ability to perform its roles, especially in financial reporting. Therefore, the next section looks at the role of AIS quality on financial reporting.

The Role of Accounting Information Systems Quality on Financial Reporting

AIS is vital and plays a vital role in providing organisational managers with detailed information about the organisation. Such information has been noted to be capable of enhancing g managers' insights into the business and directing them on the best course of action to make to meet the required targets or achieve the required goals (Djanegara et al., 2018). However, it is imperative to establish that all these activities and courses of action are influenced by the nature of the information provided. Additionally, Hann et al. (2020) contend that decisions made are a function of the quality of the information used to make such decisions. Hence, this denotes that AIS must play certain roles leading to improvements in the quality of reported information if businesses are to reap substantial gains from using it.

Since AIS is connected to the use of resources and funds injected into the business, studies assert that AIS is well programmed to accurately compute the required financial measures of the business (Aldegis, 2018; Hutahayan, 2020). Given such cases, better, effective and rational decisions will be made faster when AIS is used to compute and present financial information compared to traditional and manual accounting systems. Other studies also noted that AIS is constantly updated on an annual basis thereby allowing it to deal with inherent challenges limiting its accuracy and effectiveness (Darrough & Deng, 2019; Kwon, 2019).

Studies have long established that the failure or success of an organisation is influenced by the quality of information available (Darrough & Deng, 2019; Kwon, 2019). Such a notion entails that high-quality information must be availed to the

organisation to facilitate managers' ability to perform their duties well. One of the key aspects that facilitate such action is the accuracy of the information provided. For instance, Kwon (2019) contends that the adoption of modern accounting systems significantly enhances the accuracy of reported financial information. As a result, the extent to which managers will be able to make rational decisions will be high and this leads to improved performance.

Li, Lytvynenko and Philippoff (2021) disclosed that AIS has positive effects on the quality of reported financial reports. The study argues that AIS allows information to be verified across various platforms and departments before it is finally computed to produce the intended reports. Information verification is an important aspect in both accounting and auditing and the availability of IT systems like AIS, accountants and auditors can easily verify the sources and accuracy of the submitted financial details. This makes it easy to conduct other essential activities like bank reconciliations and thereby making sure that the produced financial statements are accurate and reliable.

AIS tends to improve the quality of financial information as it reduces errors made during data inputting. Al-Hattami and Kabra (2019) contend that AIS has specialized functions used in minimising errors by making sure that the captured information matches specific data sets or codes. Besides, the probability of making errors during the inputting stage is considered to be minimal compared to situations involving the use of manual data entry systems (Al-Hattami & Kabra, 2019).

According to Hassan and Haque (2017), AIS has secure systems that help to prevent financial data manipulations that may be perpetrated by managers. This can be evidenced by empirical findings depicting that a significant number of reasons advocating for the importance of adopting computerised accounting systems. This provides an assurance that the published information is reliable and contains no misstatements. As a result, such information is of high quality and can be relied on in making informed decisions. Stakeholders and other users of financial statements often rely on the reliability of such information to decide as to whether they should extend their services to an organisation.

Aspects like the multiplicity of elements, flow of information, simplicity, and integrity were established as having an indirect effect on the quality of reported

financial results (Djanegara et al., 2018). The positive interaction between such elements and information quality is attributed to the vast roles they have on accounting aspects such as care, due diligence, motivation that employees lace as a result of their prevalence. In another study by Hutahayan (2020), it was denoted that this can also be indirectly attributed to correct outputs, correlation and excellence.

Aldegis (2018) suggested that the extent to which AIS relates and/or works towards improving information quality is attached to the manner and extent to which it aligns with the external environment surrounding the entity, as well as the duties and restrictions imposed on management (Aldegis, 2018). Information alignment occurs when the provided information meets the organisation requirements and aids them in making decisions. Hann et al. (2020) underscored the importance of differentiating AIS based on the organization's structure and time. This is because the strategic formulation of decisions and goals together with other tasks such as planning and management are executed over short or long-term periods or both. However, Almasria et al. (2021) opine that certain information required for monitoring are short-lived. In another instance, Djanegara et al. (2018) assert that the integration of the AIS with other secondary systems plays a key role that aids in improving information quality. The same study also pinpointed that AIS should enhance flexibility towards responding to changes in the entity's competitive environment and economic circumstances. Such was linked to responsiveness to AIS users' needs and demands (Aldegis, 2018; Hutahayan, 2020).

Meanwhile, there is an adage that AIS is built to provide high quality aimed at satisfying its distinct users' needs and wants (Ganyam & Ivungu, 2019). The relevance and significance of such beliefs carry huge empirical significance at any of the organisation's administrative levels. Al-Hattami and Kabra (2019) acknowledged the importance of using AIS as an innovative tool providing substantial benefits to organisations as they can use it to communicate the organisation's operational details. Additionally, they noted that a better understanding of the business together with its needs can be provided using AIS. The notable idea was related to the development of accounting standards assisting accountants to prepare financial statements and assess the accounting information through the application of various accounting methods. This will result in organisations deciding on the best course of action to adopt.

Darrough and Deng (2019) asserted that the association between AIS and quality reporting is linked to AIS' ability to analyse data inputs to generate high quality of information required by users to make decisions. Their study highlighted the positive attributes related to AIS and cited that AIS considers both the source and quality of the information provided. In this way, measures can be taken to eliminate non-essential information as well as identify and rectify errors. Moreover, departmental databases were presumed to be connected together using specialized components of AIS, which allow information to be collected, and analysed before it is processed. Hence, the quality of processed information will be high as assessments are carried out almost at every stage of the process. Both the data entry, storage, processing and communication stages are undertaken with utmost care. Therefore, it is vital to note that⁵ AIS has significant positive effects on the quality of financial information reported by an organisation. The importance of considering information as integral for business success has long been established. For instance, Fakhimuddin (2018) mentioned that business success is highly dependent on management information systems and that any related innovative improvements made would contribute significantly to an improvement in business success. Besides, information affects every business process and activity, and hence, it is vital to ensure that accurate and relevant information is made available throughout the organisation at the appropriate time. The quality of reported information depends on the produced AIS results and will in turn influence other organisational aspects such as the company's effectiveness and efficiency.

Kwon (2019), opines that high-quality AIS is required to ensure that companies effectively and efficiently achieve their goals. However, it is vital to determine factors that can influence such an influence. Through their study, Hassan and Haque (2017) explained that organizational impact, individual impact, users' satisfaction, use, information quality, and system quality are the elements affecting the quality of accounting information quality. The lack of these variables.

Al-Hattami and Kabra (2019) mentioned that high-quality information is relevant in decision making and this entails that AIS will play a pivotal role in improving the quality of reported information by enhancing the relevance of such information. This aligns with similar propositions suggested by Almasria et al. (2021) asserting that there is a high positive correlation between information relevance and

high-quality information. Such deductions entail that organisations will significantly benefit from using AIS when the provided information is relevant for making informed decisions. What makes information relevancy an essential aspect in reporting is its ability to apply to existing situations. Irrelevant information provides little if not insignificant benefits and having systems like AIS becomes a tool of ensuring that organisations can produce relevant information at any point in time.

Studies analysing the role of AIS in improving reporting quality do reach a common consensus that AIS and information quality are positively related (Aldegis, 2018; Darrough & Deng, 2019; Fakhimuddin, 2018; Kwon, 2019). Such examinations do hold significant value in contemporary situations as high-quality information contributes significantly to the growth and development of the organisation. Several other benefits of such advantages are further linked to other benefits like competitiveness (Hann et al., 2020), profitability (Almasria et al., 2021), good corporate governance and social responsibility (Hutahayan, 2020). All these benefits represent a considerable amount of evidence supporting the importance of adopting AIS as a means of enhancing the quality of reported information. Therefore, it becomes a good base to construct our arguments that AIS should be adopted in organisations for the purpose of improving accounting, auditing, management and corporate governance matters.

Related Studies and Hypothesis Development

Eb et al. (2013) conducted a study focusing on the role of AIS in financial institutions using a sample of 50 respondents in South Africa. Their study outlined that the application of AIS is highly acceptable within the accounting field as a result of changes in the use of accounting applications. As a result, they demonstrated that the adoption of AIS serves as an innovative move aimed at enhancing effectiveness and efficiency in accounting-related activities. Additionally, their study also hinted at the importance of heightening awareness about the use of AIS and the importance of employees developing the right attitude towards AIS to enhance acceptance behaviour and effective utilization. Such a study is vital as it provides insights into some of the essential factors essential for enhancing AIS' contributions to organisations concerning improving financial reporting quality and effective utilization of resources. This denotes the importance of organisational managers of companies using AIS to

introduce or provide re-training and training programs and conducting workshops aimed at improving users' capabilities of effectively using.

Suggesting that AIS enlightens understanding of the business activities since it timely and cost-effectively provides adequate information essential for making decisions. However, there was insignificant evidence suggesting that AIS-performance related improvements were linked to better forecasting approaches of the inflation rate and exchange rate. This can possibly suggest that AIS is limited in use and effectiveness as it does not effectively use external information in making sound corporate decisions. Similar suggestions were made by Bukenya (2014) that demonstrated the AIS and financial performance of public sector organisations in Uganda. The applied descriptive and cross-sectional research designs revealed that the high quality of financial information established using AIS was adequate to warrant the formulation of rational decisions capable of enhancing financial performance. Hence, the connection linking AIS to financial performance can be noted to be decision making. Therefore, the adoption of AIS can be presumed to be aiding the formulation of high-quality decisions enabling the organisation to maximise the use of their resources, minimise costs and maximise revenue.

In a study by Dandago and Abdullahi (2014), it is highlighted that innovative developments in the banking sector are there to stimulate banking efficiency. ANOVA test was applied to test the proposed hypothesis suggesting that innovative arrangements linked to information technology were related to the facilitation of transactions among customers and reducing operational costs. Such innovations are essential, especially in contemporary situations where complex banking services and activities are an ordinary norm. Such a claim aligns with the suggestion of the idea that banks devote considerable resources towards improving their information technology systems. As a result, AIS becomes an instrumental resource capable that allows organisations to make informed decisions and the absence of it can result in poor management of the organisation. Novel ideas can be derived from their study as it can be suggested that organisations like banks can manage their operational costs to enhance profitability. This can be the main reason why banks focus on investing considerable funds in information technology (Henry, Adeniran & Olawale, 2014). Hence, the same suggestions can be made advocating banks to invest in AIS to innovate their accounting operations and enhance their decision-making capabilities

Tazik and Mohamed (2014) analysed the effects of AIS on audit reporting quality in the context of foreign ownership structure. The collected data were analysed using regression analysis to obtain insights about AIS' impacts on audit reporting quality and such will be the basis of analysing this study's collected data. Such a method is vital for testing the related hypotheses through the inherent variables to determine the significance of their effects. The findings showed that there is a positive interaction between AIS and audit reporting quality. However, it was suggested that there were potential moderating effects influencing such a relationship that needed to be incorporated in the model. As such, factors like AIS inputs, security and systems processing were considered as the notable and significant variables capable of moderating such a relationship. Therefore, this study will incorporate these variables in formulating and estimating a regression model aimed at analysing AIS's effects on audit reporting quality.

Meanwhile, the effects of AIS have been analysed in various organisational contexts aimed at illustrating specific effects. For instance, Hla and Teru (2015) through their study demonstrated that the adoption of AIS serves to enhance organisational performance through specific improvements in the quality of the reported financial information, internal controls, management and decision making. Such a study illustrates that AIS has diverse effects on an organisation and influences a significant number of organisational activities. Thus, similar deductions can be established and considered that banks will benefit in almost similar ways when they adopt AIS. Furthermore, they also noted that there were considerable improvements in organisational efficiency following the adoption of AIS by organisations. Such improvements were further linked to substantial enhancements in decision-making capabilities attributed to the availability of sufficiently true and reliable information vital for controlling and planning the business organization activities. These aspects are essential not only for non-financial institutions but also for financial institutions that work towards providing funds to businesses and individuals. This is because such an effective ability to perform their functions relies on the adequate availability of sufficiently true and reliable information.

In another study by Murungi and Kayigamba (2015), AIS's implications were related to the quality financial reports in Rwanda's Ministry of Local Government. Differences in responses were obtained following the data analysis of the questionnaire

responses indicating that 52% of the employees consider the accounting system as assisting in providing financial statements on time while 58% of the employees indicated that computerized accounting improves accountability. The feasibility of obtaining such benefits is high, especially in contemporary business situations where innovative improvements in accounting systems are being made on an annual basis. Iskandar (2015) conducted a relatively similar study but with a specific emphasis on dealing with issues undermining the use and effectiveness of AIS. That is, Iskandar's study is an effectiveness orientated study that identifies AIS' limitations when applied in organisations. As a result, Iskandar noted that lack of user competence and poor management commitment had significant adverse effects on the effective use of AIS. This implies that adopting AIS to enhance financial reporting quality can be compromised by the lack of user competence and poor management commitment. This is because such limitations stand to hinder the inputting, storing, processing and communication of financial information through the organisations. Of which these elements are integral in improving financial reporting quality, and must be given due considerations. Therefore, hypotheses will be formulated based on the 4 vital elements (information systems input, security, processing and reporting) of AIS to determine and test their influence on financial reporting quality.

The Impact of AIS Inputs on the Quality of Financial Statements

The quality of data inputted into a system determines the quality of the reported findings or financial statements. Studies have been advocating that new and innovative systems like AIS be adopted to enhance the quality of inputted financial information (Almasria et al., 2021; Henry, Adeniran & L. R, 2014). Hence, the shifting process of moving away from traditional accounting systems to modern systems is justifiable. In addition, this shift towards adopting new systems is explainable using the 'garbage-in-garbage-out' principle can also be used to illustrate this aspect. Besides, the importance of such changes is justifiable on several bases related to the need to improve data inputting, storage, processing and reporting exercises. For instance, in a study by Almasria et al. (2021), it was established that that AIS changes the way organisations input or record their financial data. This is a significant improvement compared to traditional manual and paper entry systems which are not time effective and efficient. The quality of inputted data plays an instrumental role in determining the quality of produced financial statement results. Studies recommend that care and effort must be

made in ensuring that errors are minimized and if not avoided so that accurate and reliable financial statements are provided (Aldegis, 2018; Djanegara et al., 2018). Others consider that input quality and accurate information allows organisations to make rational decisions (Ganyam & Ivungu, 2019; Muhammad & Ahmed, 2020). This is one of the key reasons why banks should have proper and effective AIS that improve the quality of data entry methods and systems. Additionally, banks and other stakeholders must make rational decisions related to the banks' operations, performance, growth and development and the effectiveness of such decisions rely on the quality of inputted data.

The 'garbage-in-garbage-out' principle can also be used to illustrate this aspect. Thus, it is practically challenging for banks to rationally make essential decisions without having accurate data. Such extends to affect the quality of both the produced financial statements and decisions made by the banks. The importance of this connection is evident in several studies and this clearly illustrates why the same should be made available for banks (Al-Delawi & Ramo, 2020; Fakhimuddin, 2018; Muhammad & Ahmed, 2020). This depicts that there is a positive association between AIS and financial statements quality. Hence, adopting AIS enhances time efficiency and effectiveness which are crucial to enhancing the quality of provided financial statements. Thus, the study contends that improvements in AIS will result in positive changes in the quality of financial statements. As a result, the study proposes to test the following hypothesis;

- **H₁**: A positive change in accounting Information systems inputs results in a positive change in the quality of financial statements.

The Impact of Information Systems Security on the Quality of Financial Statements

Security remains one of the key issues affecting banks and other non-financial institutions (Al-Wattar, Almagtome & AL-Shafeay, 2019; Huerta & Jensen, 2017; van Helden, J., & Reichard, 2019). The unavailability of secure systems leaves banks vulnerable to fraud and other data security issues and AIS can be utilized to deal with such challenges. Corporate challenges like scandals and other fraudulent cases have been based on insecure data systems that employees would exploit to commit corporate

crimes. It is no doubt that banks find it costly and disastrous to face corporate fraud and data security issues (Flayyih, Mohammed & Talab, 2019). AIS creates platforms on which banks can secure financial data and in most cases, the financial data has trails that auditors can use to trace transactions. Such used to be a challenge during periods when banks would use manual accounting systems to record and process financial information (Altawalbeh, Na'el Rawhi Hashem & Alduneibat, 2017). Thus, the introduction of AIS is a welcomed development that facilitates the establishment of secure financial data sources, storage and processing systems. Having secure financial data sources, storage and processing systems provides banks with a satisfactory guarantee that the quality of financial statements is free from manipulations. Furthermore, AIS contributes towards enhancing data security which makes it difficult for managers to tamper with the recorded financial information (Ganyam & Ivungu, 2019). Ramdany (2015) contends that AIS causes the same information to be secured in different locations making it difficult to manipulate it using unscrupulous means leading to theft. Thus, AIS is important for reducing corporate scandals in the form of theft through manipulation and abuse of organisational funds. This entails that banks will observe significant improvements in the quality of financial statements following improvements in AIS security. Such a causal connection can be illustrated using the following hypothesis;

- **H₂:** A positive change in accounting Information systems security results in a positive change in the quality of financial statements.

The Impact of AIS Processing on the Quality of Financial Statements

Information processing plays a vital role in any organisation and organisations that are capable of effectively processing information are well placed to make rational decisions effectively (Horvat & Mojzer, 2019) and quickly (Massicotte & Henri, 2021). Studies against the use of manual processing systems highlight the drawbacks of using such systems and advocate for the importance of innovating financial processing systems (Gamayuni & Dewi, 2018; Uyar, Gungormus & Kuzey, 2017). The rate at which information is processed is connected to various banking activities and functions. Of which, the quality of financial statements produced has been a highly neglected banking activity neglected by academic studies. Thus, examination of the

connection and importance of AIS processing and the quality of financial statements is instrumental and vital for studying the role and importance of AIS in banks.

AIS is also vital for enhancing the extent to which financial data is processed at various departments for different purposes. Wilkin and Tanya (2003) contend that the introduction of AIS provides organisational managers with different tools and methods of processing financial information into easy, reliable and meaningful formats. These aspects are key to enhancing the quality of financial statements and illustrates the existence of a positive link between these aspects and the quality of financial statements (Ganyam & Ivungu, 2019). However, the causal connection between AIS processing and the quality of financial statements had remained hidden in the sight of many studies. This is because the connection is presumed to be based on time (Hutahayan, 2020) and cost (Muhammad & Ahmed, 2020). However, the connection can also be linked to having effective and efficient data processing systems capable of processing vast amounts of financial data sets within a short space of time. The quality of financial statements will improve as banks will be in a position to process large amounts of data with little or no errors and hence, causing banks to produce high-quality financial statements.

- **H3:** A positive change in accounting Information systems processes results in a positive change in the quality of financial statements.

The Impact of AIS Reporting on the Quality of Financial Statements

The importance of AIS reporting can be best illustrated by contrasting and comparing traditional accounting systems and AIS. It is from these two activities that one can illustrate and highlight the importance of AIS reporting. For instance, Li, Lytvynenko and Philippoff (2021) outline that traditional accounting methods were confined to paperwork that limits ways and methods used in reporting financial results.

Financial reporting provides detailed insights into the banks' operational activities as to whether they are operating at the required capacity level (Aldegis, 2018). Asset utilization and performance ratios can be used for such purposes and this is another key feature of financial statements that makes them more beneficial to banks. Hann et al. (2020) assert that financial reporting is vital for establishing business performance levels. As such, both the bank managers and related stakeholders

can take corrective action to address performance issues and/or enhance bank performance. In another instance, Kwon (2019) mentioned that financial reporting is essential for determining an organisation's liquidity levels. It is vital to have AIS in addressing these identified issues because bank performance, capacity and liquidity positions are important for ensuring sound banking performance, development, growth and innovation. There are also other hidden details about the bank that AIS can assist in bringing out and this requires the integration of various applications and methods. For these reasons, one can contend that AIS reporting is an essential aspect that must be integrated into the banking sector.

- **H4:** A positive change in accounting Information systems report results in a positive change in the quality of financial statement reporting.

Summary of Literature Review

This chapter offers theoretical and empirical backgrounds related to accounting information systems and how it influences the quality of information produced by banks. This chapter aims to explore study gaps and create a channel through which study findings were examined.

Table 1.

Summary of reviewed studies

Author	Year	Title	Source	Finding
Kaminski	2011	Theory in Nursing Informatics Column	Canadian Journal of Nursing Informatics, 6(2), 1-6	Foremost, Rogers regards technology as hardware and software that is instrumental for reducing uncertainty about the cause and effect connections influencing the required organizational outcomes

Dearing	2009	Applying Diffusion of Innovation Theory to Intervention Development	Research on social work practice, 19(5), 503-518.	both hard and software are further presumed to have different adoption rates with the former having a higher absorption rate compared to the latter
zomo	2013	Impact of accounting information systems on organizational effectiveness of automobile companies in Kenya	(Doctoral dissertation, University of Nairobi).	businesses uses to collect, store, manage, process, retrieve, and report their financial data to make informed decisions
Aldegis	2018	Impact of Accounting Information Systems' Quality on the Relationship between Organizational Culture and Accounting Information in Jordanian Industrial Public Shareholding Companies	International Journal of Academic Research in Accounting, Finance and Management Sciences, 8(1), 70-80.	Studies show that decision-making and other vital tasks are swiftly executed when information is presented in an understandable format and manner
Yigitbasioglu	2015	The role of institutional pressures and top management support in the	Journal of Enterprise Information Management.	Corporate governance measures enacted during and after the Enron Saga are much in support of having

		intention to adopt cloud computing solutions		advanced and innovative accounting systems capable of detecting fraud
Ahmad & Al-Shbiel	2019	The Effect of Accounting Information System on Organizational Performance in Jordanian Industrial SMEs: The Mediating Role of Knowledge Management	International Journal of Business and Social Science, 10(3), 99-104.	Relevance deals with the extent to which information matches the existing business, economic and other situations
Al-Hattami and Kabra	2019	The Role of Accounting Information System (AIS) in Rationalizing Human Resource Related Decisions: A Case Study	International Journal of Management Studies, 4(2), 84-91	There are considerable suggestions emphasising the need and importance of ensuring that financial information remains relevant for making informed business decisions. For instance
Huerta & Jensen,	2017	An Accounting Information Systems Perspective on Data Analytics and Big Data	Journal of information systems, 31(3), 101-114.	modern systems are developed using special functions and algorithms allowing projections to be made about the organisation's internal processes

Kwarteng & Aveh	2018	Empirical examination of organizational culture on accounting information system and corporate performance: Evidence from a developing country perspective	Meditari Accountancy Research	contemporary studies are showing that AIS through its inert capabilities allowing businesses to maximise performance by regulating costs aids in enhancing the organisation's competitive position
Djanegara et al.,	., 2018	The effect of institutionalization isomorphic pressures and the role of knowledge management on investment decisions of the accounting information systems	Polish Journal of Management Studies, 18.	the importance of AIS in organisations is linked to marketing and advertising activities engaged by the organisations to increase sales revenue
Henry, Adeniran & Olawale,	2014	Effect of Accounting Information and Communication System on Financial Reporting Quality: A Review of Theories and Empirical Works	A Review of Theories and Empirical Works.	This can be the main reason why banks focus on investing considerable funds in information technology

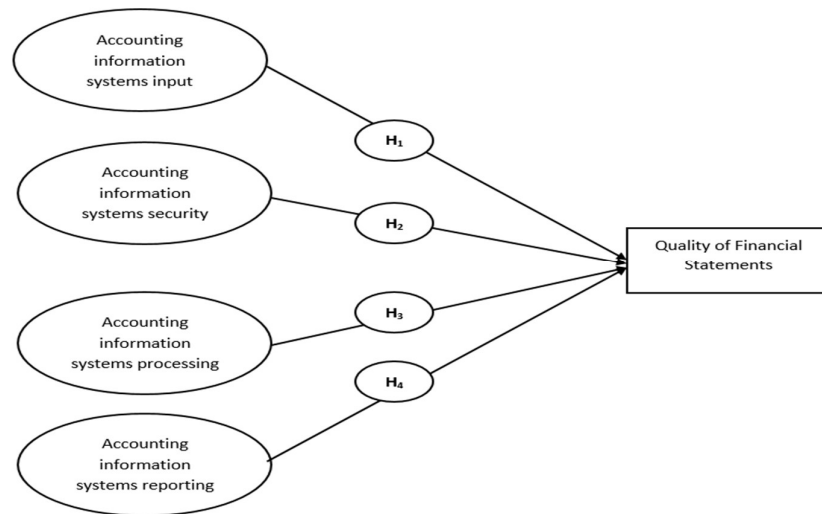
Conceptual Model

Having established the related connections and hypotheses, the study proposes the following conceptual model to examine the impact of using accounting information system on the quality of financial statements;

Figure 1

Conceptual Model

Source: Researcher (2020)



CHAPTER III

Research Methodology

Studies addressing the impact of using accounting information systems on the quality of financial data of Islamic banks are limited to the application of descriptive statistics, ANOVA and regression analysis (Al-Dalabih, 2018; Ganyam & Ivungu, 2019; Gel, 2010; Hla, & Teru, 2015). This study established a foundation on the methodological procedures presented by these studies in building an effective model capable of reliably explaining the impact of using accounting information systems on the quality of financial data of Islamic banks. Thus, this chapter provides the methods and procedures that were taken to answer the related questions and arrive at study conclusions and recommendations. As a result, this chapter specifically focuses on the study participants, measures, procedures, and analytical plans.

Participants

The study focused on Islamic banks that are located in the Erbil, Kurdistan Region of Iraq. Due to the lack of enough data to determine the exact number of employees working in Iraq's Islamic banks, the study used convenience sampling to determine the total number of participants to be used to carry out the study. This is because convenience sampling is important for focusing on important study aspects (Willaims, 2007). Convenience sampling is defined as sampling methods involving the selection of study participants based on the need or importance of their related convenience benefits (Scholtz, 2021). Emmerson (2021) notes that the benefit of using convenience sampling is that it allows researchers to focus on important aspects of the study without devoting severe attention to unnecessary details. The benefits of using convenience sampling are also evident in Stratton's (2021) showing that it is time effective and allows the researcher to have more flexibility in selecting study participants. However, convenience sampling has its own limitations and care must be taken to ensure that applying convenience sampling does not cause researchers to miss out on important research ideas. Thus, Stratton's (2021) contends that study participants selected using convenience sampling must be selected based on their effective ability to answer the related questions reliably and validly. . The 7 banks had

a total of 210 engaged in accounting and finance related activities and included junior and senior accountants, financial managers, internal auditors, and IT professionals. As a result, 210 respondents were drawn from 7 Islamic banks (Industrial Bank of Erbil, Kurdistan International Bank, Cihan Islamic Bank, Kurdistan International Bank, Alarabiya Islamic Bank, Abu Dhabi Islamic Bank and Iraqi Islamic Bank) in the Erbil, Kurdistan Region of Iraq.

Measures

The study used a questionnaire to collect data from 240 respondents drawn from 7 Islamic banks in Erbil, Kurdistan Region of Iraq. The questionnaire was composed of two sections (Section A focusing on the demographic details of the employees and Section B sought to draw information about accounting information systems and how it affected the quality of Islamic banks' financial statements).

Table 2.

Variable Description and Measures

Variable	Measure	Scale items	Supporting literature	Expected relationship
Accounting information systems' input	5-point Likert scale	8	Al-Dalabih (2018); Ali (2011).	(+)
Accounting information systems' security	5-point Likert scale	8	Al-Dalabih (2018); Ali (2011).	(+)
Accounting information systems' processing	5-point Likert scale	8	Al-Dalabih (2018); Ali (2011).	(+)
Accounting information systems' reporting	5-point Likert scale	8	Al-Dalabih (2018); Ali (2011).	(+)
Quality Of Financial Statements	5-point Likert scale	10	Al-Dalabih (2018); Porter and Norton, (2011)	

The study variables were measured on a five-point Likert scale. All the four accounting information systems inputs variable had 8 sub-elements (Al-Dalabih 2018;

Ali, 2011), accounting information systems security was composed of 8 sub-elements (Al-Dalabih 2018; Ali, 2011), accounting information systems processes included a total of 8 sub-elements (Al-Dalabih 2018; Ali, 2011), accounting information systems reports had 8 sub-elements (Al-Dalabih 2018; Ali, 2011), and quality of financial statements was made up of 10 sub-elements (Al-Dalabih 2018; Porter & Norton, 2011). Table 2 provides a description of the variable elements, scale measurement and sources that were used in carrying out this study.

Procedure

The first month of the study focused on collecting information on the related subject matters from journals, the internet and library sources of information. Such information was reviewed in the second month. Data collection, entry, analysis and presentation were done in the third and fourth months of the study. The study was finalized in the last month of the research 2021 period.

Analytical Plans

The collected data were entered and analysed using SPSS version 24 and the data analysis process involved estimating a regression model to model the impact of using an accounting information system on the quality of Islamic banks' financial statements in the Erbil Kurdistan Region of Iraq. The regression model was estimated as follows;

$$\text{Quality of financial statements (QFS)} = F \{ \text{Accounting information systems' inputs (AISI); Accounting information systems' security (AISS); Accounting information systems' process (AISP); Accounting information systems' reporting (AISR)} \} \quad (1)$$

Integrating regression analysis concepts of a constant (α) and error term (μ) provides the following model;

$$\text{QFS} = \alpha + \beta_1\text{AISI} + \beta_2\text{AISS} + \beta_3\text{AISP} + \beta_4\text{AISR} + \mu \quad (2)$$

The regression model assisted in testing the established hypotheses and determine the direction of impact between the impacts of using an accounting

information system on the quality of Islamic banks' financial statements. The following hypotheses were developed using the established conceptual model;

- **H₁:** Accounting Information systems inputs has a positive effect on the quality of financial statements inputs.
- **H₂:** Accounting Information systems security has a positive effect on the quality of financial statements inputs.
- **H₃:** Accounting Information systems processes has a positive effect on the quality of financial statements.
- **H₄:** Accounting Information systems reports has a positive effect on the quality of financial statements.

Standard deviation and means were also used as part of the descriptive statistics analysis. The Pearson correlation coefficient test was also used to test the correlations between accounting information systems and the quality of financial statements. . The reliability of the model variables was assessed using Cronbach's alpha, which provides an indication of the variables' internal consistency (Altmann et al., 2019). The guideline is that variables with Cronbach's alpha values exceeding 0.70 are reliable (Hayes & Coutts, 2020).

CHAPTER IV

Data Analysis

The results presented in this study are based on the analysed 210 responses collected from 7 Islamic banks in the Kurdistan region of Iraq. Data procedures presented in this study were done using SPSS version 24 with the aid of descriptive statistics, correlation coefficient tests, ANOVA, and regression analysis. This chapter aims to provide empirical support concerning the impact of using an accounting information system on the quality of financial statements: a case study of Islamic banks in the Kurdistan region of Iraq.

Respondent Profile

The 210 employee responses comprised of 14 accountants, 14 junior and senior finance managers, 21 IT specialists, and 161 employees from other departments. Additionally, the employee responses were made up of 123 male employees and 87 female employees. Table 2 results that were calculated using frequency tabulation show that a huge number of the Islamic bank employees were in the range of 26-33 years (n=128) followed by 48 employees who were aged between 31-41 years and the least between 27 employees that were aged between 18-25 years. Additionally, 15 Islamic banks employees held diplomas, 27 undergraduate degrees, 157 master's degrees, and 11 PhD degrees. Furthermore, 15.71% had been serving the Islamic banks for less than 2 years, 20.95% worked for the Islamic banks 3-4 years, 40.48% between 5-6 years, and 22.86% of the employees had been working for the Islamic banks for at least 7 years (see Table 3). It is through the study that it was revealed that 161 employees had novice accounting expertise, 21 employees had intermediate accounting expertise, and 28 bank employees had expert accounting expertise.

Table 3.

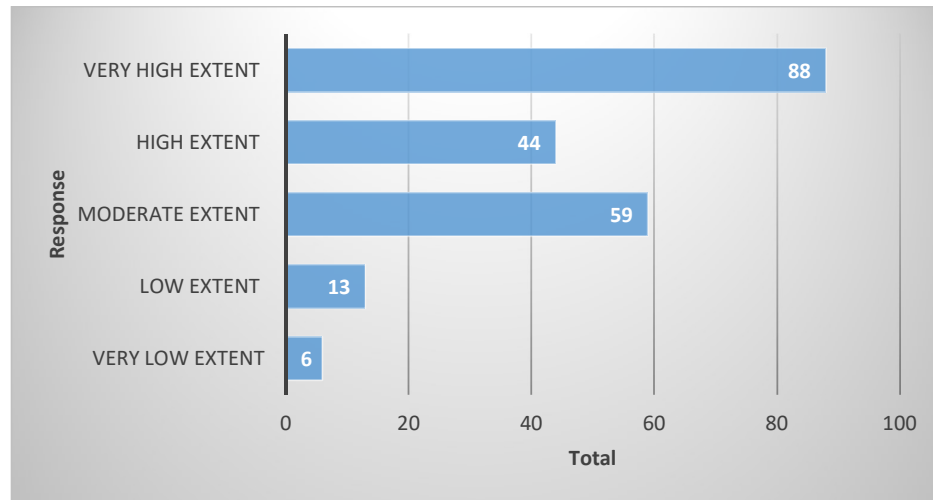
Demographic Analysis

	Variable	Description	Frequency	Percentage	Total
1	Gender	Male	123	58.57	210
		Female	77	41.43	
2	Age	18-25 years	27	12.86	210
		26-33 years	128	60.95	
		34-41 years	48	22.86	
		42 years and above	7	3.33	
3	Level of education	Diploma	15	7.14	210
		Undergraduate	27	12.86	
		Master's	157	74.76	
		PhD	11	5.24	
4	Work experience	Less than 2 years	33	15.71	210
		3-4 years	44	20.95	
		5-6 years	85	40.48	
		7 years and above	48	22.86	
5	Position	Accountants	14	6.67	210
		Finance professionals	14	6.67	
		IT specialists	21	10.00	
		Other professionals	161	76.66	

The Importance of AIS in Banks

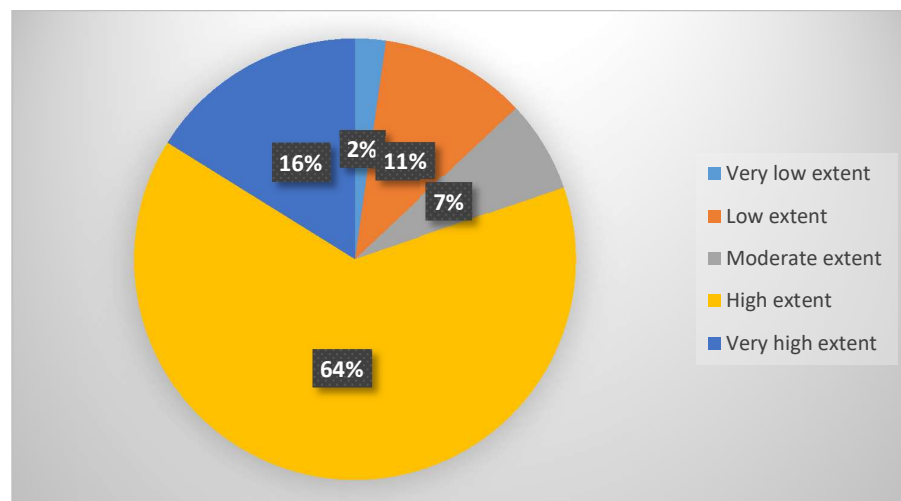
The employees were asked questions using the questionnaire to determine the extent they consider AIS vital for their banks. Figure 4.1 was used to enhance understanding of the importance of AIS in banks. As a result, Figure 4.1 shows that 6 employees regarded AIS as important for Islamic banks to a very low extent, 13 employees to a low extent, 59 to a moderate extent, 44 to a high extent, and 88 employees to a very high extent. Overall, this implies that more employees (n=132 employees) indicated that AIS is important for Islamic banks to a high extent against 13 employees who indicated that this view is to a low extent. Moreover, 6 employees indicated that AIS is vital for Islamic banks to a very low extent. Therefore, it is imperative to say that AIS is important for Islamic banks.

Figure 2

The Importance of AIS in Banks

The researcher proceeded to examine the extent to which AIS contributes to the effectiveness of the Islamic bank's departments. Several employees indicated that AIS contributes to the enhancement of the Islamic banks' effectiveness to a very high extent (16%), and high extent (64%), against 10 employees who regarded AIS as contributing to the banks' effectiveness to a very low extent (2%), and low extent (11%).

Figure 3

The Department's Effectiveness Of AIS' in Islamic Banks

7% of the employees indicated that AIS enhances the Islamic banks' effectiveness to a very moderate extent (see Figure 4.2). Subsequently, the researcher attempted to determine which of the two between AIS and IT, did the bank employees think needed a lot of improvements. 154 employees were in support of the idea that Islamic banks must improve their IT infrastructure against 56 employees who supported the idea that AIS needs further improvement to enhance its use, understanding and importance in banks.

The Use of AIS in Islamic Banks

Different questionnaire responses were obtained when the respondents were asked questions about the use and importance of AIS in banks. For instance, a high mean value of 3.920 linked to a standard deviation of 0.692 was obtained when the employees were asked questions that AIS is associated with the ease and speed of data entry. This significantly shows that a high number of employees agreed to this idea.

Table 4.

The Use of AIS in Islamic Banks

Accounting information systems	Mean	Std. Dev.
Accounting information systems are flexible in the data processing.	3.221	0.864
Accounting information systems help to achieve goals accurately and quickly.	3.618	0.143
Data are processed through an accounting system consistent with accounting policies.	2.879	0.227
The cost of accounting information systems in the company is consistent with the nature and size of the financial data provided by the system.	3.187	0.446
Accounting information systems in the company are easily updated data.	2.884	0.224
The system provides data that is comparable.	3.668	0.941
The system provides integrated data that will affect the effectiveness of the company.	3.880	0.686
Accounting information systems are characterized by the ease and speed of data entry	3.920	0.692
The inputs of accounting information systems are presented in an easy and clear manner.	3.462	0.545
Inputs of accounting information systems are maintained in a secured manner.	3.123	0.320
The company is keen to have a particular computer password for each employee and change it from time to time.	2.101	0.560
The company provides adequate protection against the risks of computer viruses.	2.185	0.817
The Company has clear and written policies regarding the security of accounting information systems.	2.016	0.773
The company's management implements information security protection objectives such as privacy, avoiding unauthorized data change.	3.779	0.840
The company's management updates the methods of protecting the accounting information systems according to the changes taking place in the technology.	3.182	0.645

Also, it was observed that several bank employees agreed to the idea that the banks' management implements information security protection objectives like avoiding unauthorized data and privacy as noted by a mean value of 3.779 and a standard deviation of 0.840. This shows that bank employees highly consider unauthorized data and privacy as one of the most important reasons and benefits of using AIS. This was followed by observations made when the employees were asked questions about AIS helping banks to achieve goals accurately and quickly as noted by a mean value of 3.618 and standard deviation of 0.143. In addition, relatively similar observations were made when the bank employees were asked whether AIS enhances flexibility in data processing as evidenced by a mean value of 3.221 and a standard deviation of 0.864 and if AIS inputs are presented in a clear and easy way as noted by a mean value of 3.462 and a standard deviation of 0.545. Nevertheless, low responses were also observed regarding questions like

The bank is keen to have a particular computer password for each employee and change it from time to time with a mean value of 2.101 and a standard deviation of 0.560. This also includes questions about if the bank has clear and written policies regarding the security of accounting information systems as evidenced by a mean value of 2.016 and a standard deviation of 0.773.

Descriptive Statistics

Descriptive statistics were computed for the four independent variables (accounting information systems input, accounting information systems security, accounting information systems processing, and accounting information systems reporting), and an independent variable (quality of financial statements). Observations made from Table 5 reveal that all the variables had mean values above 3 and that on a Likert scale of 5 translates to relatively agree. This entails that the employee responded agreed on average to almost all the questions that were asked about the impact of the use of accounting information systems on the quality of financial data of Islamic banks.

Meanwhile, the bank employees can be said to have indicated that they significantly agree to the way quality of financial statements, accounting information systems input, and accounting information systems processed with respective mean values of 3.764, 3.724 and 3.754. Only the variable accounting information systems security had the lowest mean value of 2.396, and this entails that the employees

relatively disagreed regarding its effects on the quality of financial statements. The variable Accounting information systems input had huge responsive effects of 0.666, and this means that any improvements in this variable would potentially lead to huge improvements in the quality of financial statements.

Table 5.

Descriptive Statistics

Descriptive Statistics			
	N	Mean	Std. Deviation
Accounting information systems input	210	3.724	0.666
Quality of financial statements	210	3.764	0.480
Accounting information systems security	210	2.396	0.314
Accounting information systems reporting	210	3.642	0.453
Accounting information systems processing	210	3.754	0.434

Correlation Coefficient Test

The Pearson correlation coefficient test was used to analyse how the AIS variables were correlated with the Islamic banks' quality of financial statements. All the four AIS variables were positively correlated with each other. This matches previous studies highlighting that improvements in any AIS elements tend to cause similar improvements in other AIS elements (Hla & Teru, 2015). Additionally, this also shows that there exists a positive interaction between AIS variables and the quality of financial statements (Gel, 2010). AIS and ISP were positively and highly correlated with each other by 0.896, while a lowest positive correlation was observed between AISR and ISS of 0.094. This shows that there are relatively low positive co-movements observable between AISR and ISS. The computed results are shown in Table 6.

Table 6.

Correlation Coefficient Test

		Correlations				
		ISI	QFS	ISS	AISR	ISP
ISI	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	210				
QFS	Pearson Correlation	.617**	1			
	Sig. (2-tailed)	.000				
	N	210	210			
ISS	Pearson Correlation	.127	.510**	1		
	Sig. (2-tailed)	.067	.000			
	N	210	210	210		
AISR	Pearson Correlation	.674**	.446**	.094	1	
	Sig. (2-tailed)	.000	.000	.177		
	N	210	210	210	210	
ISP	Pearson Correlation	.687**	.896**	.402**	.509**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	210	210	210	210	210

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

QFS=quality of financial statements; *ISI*=AIS input; *ISS*=AIS security; *AISR*=AIS reporting; and *ISP*= AIS processing

ANOVA Test

A regression model was estimated to provide answers related to the impact of using accounting information systems on the quality of financial data of Islamic banks. However, attention was placed towards making sure that the estimated model is reliable and valid for use. As a result, the ANOVA test was used to test the estimated regression model to determine whether it is fit for use and has no outliers. An F-statistic value of 253.111 was significant at 1% and this implies that the estimated regression model had no outliers and was homogeneous for use and making decisions related to the impact of using accounting information systems on the quality of financial data of Islamic banks.

Table 7.

ANOVA Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.995	4	9.999	253.11	0.000 ^b
	Residual	8.098	205	0.040	1	
	Total	48.093	209			

a. Dependent Variable: QFS

b. Predictors: (Constant), **ISI**=AIS input; **ISS**=AIS security; **AISR**=AIS reporting; and **ISP**= AIS processing

Model Summary

The model summary results provided in Table 8 shows that the regression model had an R-square value of 0.832. Thus, it can be said that 83.2% of the changes in the quality of financial statements were explained by AIS input, AIS security, AIS reporting, and AIS processing. An insignificant value between the R-square value of 0.832 and an adjusted R-square value of 0.828 shows that the regression model had no estimation issues affecting its validity and reliability. Therefore, it can further be said that the estimated regression model is fit for analyzing the impact of using accounting information systems on the quality of financial data of Islamic banks.

Table 8.

Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.912 ^a	0.832	0.828	0.19875

a. Predictors: (Constant), **ISI**=AIS input; **ISS**=AIS security; **AISR**=AIS reporting; and **ISP**= AIS processing

Regression Analysis

The study resorted to using regression analysis so as to be able to determine the effects and compute both the magnitude of effects between the model variables (Green, 2013). The regression analysis shows that improvements in AIS input have a

positive effect on the quality of financial statements. These results are consistent with Ganyam and Ivungu's (2019) study findings showing that high-quality information input is essential for improving the quality of reported financial statement results. This can also be linked to the 'Garbage-in and Garbage-out' concept that can be translated into meaning that using poor quality accounting data results in the production of financial statements that do not accurately the banks' financial position and performance. Besides, Ramdany (2015) established that that AIS changes the way organisations input or record their financial data. In other words, this is a significant improvement compared to traditional manual and paper entry systems which are not time effective and efficient. Hence, these results demonstrate and prove that there is a positive association between AIS and financial statements quality.

Table 9.

Regression Analysis

	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. Error	Coefficients Beta		
(Constant)	-0.292	0.154		-1.893	0.060
ISI	0.047	0.034	0.065	1.391	0.166
ISS	0.287	0.049	0.188	5.843	0.000
AISR	-0.016	0.041	-0.015	-0.381	0.703
ISP	0.866	0.049	0.784	17.798	0.000

ISI=AIS input; **ISS**=AIS security; **AISR**=AIS reporting; and **ISP**= AIS processing

Table 9 regression results also provide strong evidence of the existence of a positive relationship between AIS security and the quality of reported financial results of 0.287. These results are also supported by similar examinations made in a study by Ramdany (2015) showing that AIS causes the same information to be secured in different locations making it difficult to manipulate it using unscrupulous means leading to theft. Additionally, AIS is important for reducing corporate scandals in the form of theft through manipulation and abuse of organisational funds.

Results provided in this study using Table 9 also indicate that AIS reporting negatively affects the quality of reported financial results by -0.016. Such a relationship contrasts other previous results that show that improvements in the quality of reported financial statements are positively linked to AIS reporting (Wilkin & Tanya, 2003). This shows that AIS reporting failed to contribute or make a positive

impact on the development of various and effective ways of reporting financial outcomes. In other words, these results show that using the computerization of AIS to report the Islamic bank's financial performance was ineffective and inefficient possibly because of costs involved in adopting and implementing AIS in banks.

In another instance, Table 9 results show that there is a positive connection linking the quality of financial statements and AIS processing of 0.866. A study by Wilkin and Tanya (2003) contend that the introduction of AIS provides organisational managers with different tools and methods of processing financial information into easy, reliable and meaningful formats. These aspects are key to enhancing the quality of financial statements and illustrates the existence of a positive link between these aspects and the quality of financial statements. Besides, Ganyam and Ivungu (2019) assert that AIS reporting is also vital for enhancing the extent to which financial data is processed at various departments for different purposes.

Table 10.

Hypothesis Test Results

Null hypotheses	Obtained Probability	Overall decision
Accounting Information systems inputs has a positive effect on the quality of financial statements inputs.	0.166	Reject
Accounting Information systems security has a positive effect on the quality of financial statements inputs.	0.000	Accept
Accounting Information systems report has a positive effect on the quality of financial statement reporting.	0.703	Accept
Accounting Information systems processes have a positive effect on the quality of financial statements.	0.000	Reject

A summary of the hypothesis results that were carried out using the established regression analysis proved that only two hypotheses were accepted and the rest were rejected. That is, it was accepted at 5% that AIS security has a positive effect on the quality of financial statements inputs. Additionally, hypothesis 2 was accepted leading to the suggestion that AIS reporting has a positive effect on the quality of financial statement reporting. On the contrary, it was rejected at 5% that AIS inputs have a

positive effect on the quality of financial statements inputs. This also includes rejecting the idea AIS processes has a positive effect on the quality of financial statements.

Reliability Tests

The study applied Cronbach's alpha test to test the reliability of the model variables. Cronbach's alpha test helps to make sure that the study variables provide reliable explanations about the impact of using accounting information systems on the quality of financial data of Islamic banks (Hayes & Coutts, 2020). Cronbach's alpha test uses a basic principle that variables with Cronbach's alpha values of at least 0.70 are highly reliable (Altmann et al., 2019). Both variables were highly reliable as their Cronbach's alpha values were above 0.70. That is, QFS=0.747; AIS input = 0.792; AIS security = 0.864; AIS reporting = 0.809; and AIS processing = 0.742. The results are presented in Table 10. Therefore, these results imply that the estimated regression model is reliable in explaining the impact of using accounting information systems on the quality of financial data of Islamic banks.

Table 11.

Reliability Tests

	Cronbach's Alpha if Item Deleted
ISI	0.792
QFS	0.747
ISS	0.864
AISR	0.809
ISP	0.742

Total Cronbach's Alpha = **0.831** and number of Items = **5**

QFS=Quality of financial statements; **ISI**=AIS input; **ISS**=AIS security; **AISR**=AIS reporting; and **ISP**= AIS processing

CHAPTER V

Conclusions, Recommendations and Suggestions for Further Studies

The study sought to resolve the impact of the use of accounting information systems on the quality of financial data. These issues were linked to observations made by the researcher showing that studies on AIS are highly linked to conventional banks. This had left huge academic gaps as little was being done to examine similar developments in the context of Islamic banks. In addition, the study secondary aims were linked to the importance of identifying ways through which AIS affects the quality of financial data. Such circumstances led to incidences revealing that AIS affects the quality of financial statements through changes in AIS inputs, security, processing and reporting. But, these four distinct aspects are not widely covered in academic research. Thus, these four distinct aspects were included in analysing how they influence the quality of Islamic banks' financial statements in the Kurdistan Region of Iraq as studies that examine this issue are confined to countries like the United States of America.

Preliminary examinations made in this study show that Islamic banks significantly regard using AIS as being of high importance. This is significantly true and important, especially when considerations are made that traditional or manual accounting systems are ineffective and inefficient. Thus, the positive benefits of using AIS like time management, cost-effectiveness, convenience and other related benefits are the ones that cause Islamic banks to significantly regard AIS as essential. Besides, related studies show that adopting AIS has numerous benefits that banks and other non-banking institutions can benefit from and improve their operational effectiveness. Other than that managing the banks has been proving difficult in times when effective and fast accounting systems were not available. Thus, introducing AIS in banks is a highly welcomed development that is aimed at improving the inputting, storage, processing, security and reporting of banking information.

Using AIS is regarded as important and bank employees support the adoption and implementation of AIS in banks. Employees find it easy to access, store, and process information when automatic accounting systems are in place as opposed to traditional systems. The results of this study have proved that fraud and other auditing

activities are also connected to the roles and importance of AIS in banks. This implies that much and greater auditing goals can be achieved when banks have effective and efficient accounting systems like AIS. Furthermore, benefits linked to rational decision making are also obtainable when banks adopt AIS.

Improvements in any of the four distinct AIS aspects (inputting, processing, securing and reporting), are essential for improving the effectiveness of the other AIS elements. It is in this regard that Islamic banks in the Kurdistan Region of Iraq have been noted to effectively all these aspects to improve both the use and adoption of AIS in Islamic banks. Furthermore, the effective harnessing of AIS by Islamic banks is important for improving the quality of reported financial statement results. As such, the results presented have provided strong evidence linking AIS to the quality of financial statements produced by Islamic banks.

The Islamic banks' capacity to improve in AIS input is essential for improving the quality of their financial statements. Such is important for banks because high-quality information input is required and vital for producing high-quality financial statement results. Hence, banks are able to make rational decisions leading to improved bank performance as the produced financial statements accurately reflect the banks' financial position and performance. Other bank stakeholders like creditors and suppliers also rely on the quality of financial statements produced by banks. Therefore, producing high-quality financial statements makes it easy for stakeholders to make related decisions in an effective manner that enhances their interests.

The study has successfully demonstrated that AIS security is important for banks as it leads to improved and high-quality financial results. Such results are strongly supported by similar examinations and hence, this study highlights that AIS helps to keep the banks' financial information secured in different locations making it difficult to manipulate it using unscrupulous means leading to theft. Alternatively, AIS is an important element or function that contributes to the effectiveness of the banks' auditing activities. Therefore, there is a high assurance that the produced AIS information is secured and free from manipulation by bank employees. Furthermore, the study has indicated that there is a positive connection linking the quality of financial statements and AIS processing. Such observations can be connected to the idea that introducing AIS provides bank managers with different tools and methods of

processing financial information into easy, reliable and meaningful formats. Therefore, Islamic banks will benefit a lot as they will be having several ways of improving the quality of their financial statements.

The study improves understanding regarding the impact of using an accounting information system on the quality of Islamic banks' financial statements. It is also important for providing information that can be used to model a conceptual framework capable of analysing the effects of structural problems like those caused by accounting information systems and how they affect the performance of Islamic banks. The results will be important for providing suggestions on how to benefit, fully utilise and take advantage of the benefits of accounting information systems to enhance the quality of their financial statements.

The study provides novel ideas regarding the connection between AIS reporting the quality of reported financial results that have been shown to be negative. As a result, this leads to solutions being sought by banks as to why and how such a negative connection exists. This has not been covered by other studies and this study contributes significantly to existing studies and this creates a platform on which future studies can be developed. In some way, the study shows that using computerized accounting systems does not always lead to improvements in the quality of produced financial statements. As such, there are other challenges, drawbacks and costs involved that can limit both the use, efficiency and effectiveness of AIS by Islamic banks. These issues can hinder the banks' financial performance through financial accounting and auditing ineffectiveness and inefficiency problems. Therefore, this study leads to the conclusion that there is a need to address problems limiting the use and effectiveness of AIS in banks.

The study has successfully managed to address the given research problems and plays an important role in developing practical solutions leading to improvements in the use and role of financial and accounting data in banks. Additionally, this can also be connected to auditing activities that rely on the quality of produced financial statements. Therefore, study recommendations will be made based on these study conclusions.

Recommendations

Given the above-mentioned conclusions, the study recommends the following important points;

- Banks must deal with challenges, drawbacks and costs limiting both the use, efficiency and effectiveness of AIS by Islamic banks.
- Constant and continuous improvements in AIS input, storage, processing, security and reporting are required to further enhance the quality of produced financial statements and related decisions made by banks.
- Further employee training programs are needed to enhance the effective use of AIS in banks and the way bank employees use, process and distribute accounting information within the banks and outside the bank. Such is done to uphold high-quality financial statements preparation and reporting quality, and integrity.
- Banking laws and regulations can be used to support the effective use of AIS in banks by making sure that all the necessary AIS procedures are adhered to so as to improve its effective and efficient use by banks.

Suggestions for Further Studies

The study is limited to Islamic banks located in Erbil, Kurdistan of Iraq whose study sample size was determined using convenience sampling methods. This limits the provision of accurate ideas that describe the Islamic banks' situation and how the adoption of AIS can be used to improve the quality of reported financial statement results. Moreover, the study requires comparative examinations with conventional banks to be made to capture and document to which accounting information systems affect both banks and whether differences in banking structure influences its effectiveness and effects on the quality of financial statements.

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APPENDICES**Appendix A**
Questionnaire**SECTION A: RESPONDENT PROFILE**

Please tick where appropriate ✓

1. What is your gender? Please tick where appropriate.

Male

Female

2. What is your age group? Please tick where appropriate.

18-25 years

26-33 years

34-41 years

42-49 years

50 years and above

3. What is your academic qualification? Please tick where appropriate.

Diploma

Bachelor

Master

PhD

4. How many years have you been working for this company? Please tick where appropriate.

less than 5 years

6-10 years

11-15 years

16 years and above

5. Accounting information systems expertise.

Novice

Intermediate

Expert

6. To what extent do you consider accounting information systems vital for your company? Please tick where appropriate.

Very low extent

Low extent

Moderate extent

High extent

Very high extent

7. To what extent does accounting information systems contribute to the effectiveness of your department? Please tick where appropriate.

Very low extent

Low extent

Moderate extent

High extent

Very high extent

8. To what extent does information technology contribute to the effectiveness of your department? Please tick where appropriate.

Very low extent

Low extent

Moderate extent

High extent

Very high extent

9. Between accounting information systems and information technology, which do you think needs a lot of improvements? Please tick where appropriate.

Accounting information systems

Information technology

SECTION B: ACCOUNTING INFORMATION SYSTEMS

This section seeks to obtain information about the use of accounting information systems and how it affects the dimensions of accounting information quality in your organisation. Please indicate the extent to which to agree or disagree by ticking on only one number option for each of the items or statement on the table below:

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

Accounting information systems		1	2	3	4	5
10	Accounting information systems are flexible in data processing.					
11	Accounting information systems help to achieve goals accurately and quickly.					
12	Data are processed through an accounting system consistent with accounting policies.					
13	The cost of accounting information systems in the company is consistent with the nature and size of the financial data provided by the system.					
14	Accounting information systems in the company are easily updated data.					
15	The system provides data that is comparable.					
16	The system provides integrated data that will affect the effectiveness of the company.					
17	Accounting information systems are characterized by the ease and speed of data entry					
18	The inputs of accounting information systems are presented in an easy and clear manner.					
19	Inputs of accounting information systems are maintained in a secured manner.					
20	The company is keen to have a particular computer password for each employee and change it from time to time.					
21	The company provides adequate protection against the risks of computer viruses.					
22	The Company has clear and written policies regarding the security of accounting information systems.					
23	The company's management implements information security protection objectives such as privacy, avoiding unauthorized data change.					
24	The company's management updates the methods of protecting the accounting information systems according to the changes taking place in the technology.					

		1	2	3	4	5
25	Accounting information systems are flexible in data processing.					
26	Accounting information systems help to achieve goals accurately and quickly.					
27	Data are processed through an accounting system consistent with accounting policies.					
28	The cost of accounting information systems in the company is consistent with the nature and size of the financial data provided by the system.					
29	Accounting information systems in the company are easily updated data.					
30	The system provides data that is comparable.					
31	The system provides integrated data that will affect the effectiveness of the company.					
32	Accounting information systems are characterized by the ease and speed of data entry.					
33	The inputs of accounting information systems are presented easily and clearly.					
34	Inputs of accounting information systems are maintained in a secured manner.					
35	The company is keen to have a particular computer password for each employee and change it from time to time.					
36	The company provides adequate protection against the risks of computer viruses.					
37	The Company has clear and written policies regarding the security of accounting information systems.					
38	The company's management implements information security protection objectives such as privacy, avoiding unauthorized data change.					
39	The company's management updates the methods of protecting the accounting information systems according to the changes taking place in the technology environment.					
40	The financial data are provided at an appropriate time so they reach the decision-maker before losing their ability to influence the taken decision.					
41	The company's financial data are adopted in the comparison with other companies within the same sector.					
42	The financial data are registered and examined by registering, analyzing, tabulating and classifying them.					
43	Financial data that are easily saved, are easily retrieved at any time					

44	The company is distinguished by its accuracy in presenting users' needs of financial data.					
45	Accurate financial data help the company make financial decisions					
46	Financial data are judiciously prepared to ensure its accuracy and correctness.					
47	The provided financial data are consistent with the users' needs in different financial periods per year.					
48	The company's financial data are flexible in its use in various aspects and objectives.					
49	The company's financial data are clear and uncomplicated.					
50	The company's financial data are easily understood among its various users.					
51	The company's financial data are inclusive of all the financial aspects that users need in the decision-making process.					

Thank you



YAKIN DOĞU ÜNİVERSİTESİ

**BİLİMSEL ARAŞTIRMALAR ETİK
KURULU**

05.10.2021

Dear Issa Luqman

Your application titled **“The Impact of Using Accounting Information System on the Quality of Financial Statements: A Case Study of Islamic Banks in The Kurdistan Region of Iraq”** with the application number NEU/SS/2021/1091 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Note:If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

Appendix B

Turnitin Similarity Report

ORIGINALITY REPORT

13%

SIMILARITY INDEX

9%

INTERNET SOURCES

6%

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