

9-1-2023

The Effect of System Quality and User Quality of Information Technology on Internal Audit Effectiveness in Jordan, And the Moderating Effect of Management Support

Ahmad Yahiya Ahmad Bani Ahmad (Ayassrah)

Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Amman, Jordan, Abaniattah@meu.edu.jo

Anas Ahmad Mahmoud Bani Atta

Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Amman, Jordan, Abaniattah@meu.edu.jo

Hanan Ali Alawawdeh

Accounting Department, Business Faculty, Isra University, Amman, Jordan, Abaniattah@meu.edu.jo

Nawaf Abdallah Aljundi

Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Amman, Jordan, Abaniattah@meu.edu.jo at: <https://digitalcommons.aaru.edu.jo/amis>



Part of the Applied Mathematics Commons, Computer Sciences Commons, Digital Communications Commons, and the Middle East Commons.
Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Amman, Jordan, Abaniattah@meu.edu.jo

Recommended Citation

See next page for additional authors, Ahmad; Ahmad Mahmoud Bani Atta, Anas; Ali Alawawdeh, Hanan; Abdallah Aljundi, Nawaf; Morshed, Amer; and Amin Dahbour, Saleh (2023) "The Effect of System Quality and User Quality of Information Technology on Internal Audit Effectiveness in Jordan, And the Moderating Effect of Management Support," *Applied Mathematics & Information Sciences*: Vol. 17: Iss. 5, Article 12. DOI: <https://dx.doi.org/10.18576/amis/170512>
Available at: <https://digitalcommons.aaru.edu.jo/amis/vol17/iss5/12>

This Article is brought to you for free and open access by Arab Journals Platform. It has been accepted for inclusion in Applied Mathematics & Information Sciences by an authorized editor. The journal is hosted on [Digital Commons](#), an Elsevier platform. For more information, please contact rakan@aarj.edu.jo, marah@aarj.edu.jo, u.murad@aarj.edu.jo.

The Effect of System Quality and User Quality of Information Technology on Internal Audit Effectiveness in Jordan, And the Moderating Effect of Management Support

Authors

Ahmad Yahiya Ahmad Bani Ahmad (Ayassrah), Anas Ahmad Mahmoud Bani Atta, Hanan Ali Alawawdeh, Nawaf Abdallah Aljundi, Amer Morshed, and Saleh Amin Dahbour

The Effect of System Quality and User Quality of Information Technology on Internal Audit Effectiveness in Jordan, And the Moderating Effect of Management Support

Ahmad Yahiya Ahmad Bani Ahmad (Ayassrah)¹, Anas Ahmad Mahmoud Bani Atta^{1,*}, Hanan Ali Alawawdeh², Nawaf Abdallah Aljundi¹, Amer Morshed¹, Saleh Amin Dahbour¹, and Mithkal Hmoud Alqaraleh¹

¹Financial and Accounting Sciences Department, Faculty of Business, Middle East University, Amman, Jordan

²Accounting Department, Business Faculty, Isra University, Amman, Jordan

Received: 10 Jun. 2023, Revised: 2 Jul. 2023, Accepted: 17 Aug. 2023

Published online: 1 Sep. 2023

Abstract: The goal of this study is to ascertain the moderating role that management support has in internal audit effectiveness in Jordan, as well as the impact of system quality and user quality of information technology. There were 172 responders in all, and they were split across Jordanian auditors. In the data analysis process, the quantitative analysis test—which consists of the validity test, reliability test, test of conventional assumptions, and hypothesis test—is applied. Information technology system and user quality are independent variables in this study. The dependent variable in this study is internal audit effectiveness, and the moderating variable is management support. The results of this study show that the effectiveness of internal audits is significantly impacted by the system quality and user quality of information technology. Additionally, with Management support acting as a moderating factor, the link between System quality and Audit effectiveness improves. The findings also indicate that when moderating variables are present, the connection between User quality and Audit effectiveness changes from positive to negative. Future research might look at risk management.

Keywords: System quality, User quality, Internal audit effectiveness, Management support

1 Introduction

Internal auditing's primary objective is to objectively confirm that an organization's internal control systems are operating effectively [1, 2]. Businesses need to manage their institutions and use their laws more efficiently because the business environment is constantly changing [3, 4]. Otherwise, businesses run the danger of catastrophes like mistakes, scandals like financial stealing, and losses. In essence, an internal audit serves as the accounting officer's primary source for an impartial assessment of control and governance [5]. This is done by measuring and assessing how well they perform in achieving the goals of the companies. Furthermore, the management's commitment to execution is essential; otherwise, the results and suggestions of the internal audit won't be useful [6].

How well internal audit contributes to effective service delivery should be used to judge its effectiveness [7]. [8, 9]

Claim that because this review provides a logical and disciplined means for enhancing and assessing the effectiveness of its control, it helps the company achieve its

goals. Additionally, it makes improved internal audit services more necessary. Additionally, highlighting the necessity for organizations to evaluate and enhance control efficacy [5]. [10] established corporate governance to allow for the direct management of firm operations.

Internal audits have a significant impact on each audited individual's effectiveness as well as the business as a whole [2, 8, 11, 12]. An internal audit, in particular, ensures the suitability of the audit's activities and methods. As a result, internal audits help the audited and the business as a whole become more effective [13]. According to [14], internal audit facilitates speedy information collecting and issue detection and contributes to the nation's economy. Additionally, according to [15], internal audits might aid in preventing fraud, embezzlement, and other financial irregularities while also ensuring that resources were utilized wisely and effectively, assisting the company in achieving its objectives.

Conveniently, the accounting information system comprises of a system used to gather, record, store, and manage data so that information may be created that will subsequently be used for decision-making [16]. The accounting

*Corresponding author e-mail: abaniattah@meu.edu.jo

information system is made up of a number of different elements, including personnel, software, data instructions and procedures, information technology infrastructure, internal controls, and security measures. [17] stressed the vital role the accounting information system plays in the management of the data of transactions related to its economic activity. Through the usage of an accounting information system, a business entity might perform the tasks of transaction recording, preservation, and processing. It could also create the financial information that management would need to make decisions.

Management assistance has been recognized as one of the most crucial requirements for ensuring internal audit effectiveness, which in turn increased overall organizational performance [18]. [19] highlighted in their exploratory studies that the influence of managerial support is inconsistent with the efficacy of private or public organizations. The study continued by stating that top management's decisions even had an impact on the elements that determine internal audit effectiveness, including competency, independence, size, career development, hiring qualified and experienced staff, and allocating enough resources to the internal audit department. Additional [20] advocated evaluating how management's use of information technology affects the effectiveness of internal audits. For the first time in the context of Jordan, the current study uses the variable of management support as a mediator between information technology and the effectiveness of internal audits.

The following information is divided into six sections in this paper: The topic under study is introduced in Section 1, and the problem statement is covered in Section 2. Section 3 reviews the literature; Section 4 describes the research methodology, including sampling; validity and reliability of the data collection tool used; research design; study population; unit of analysis; and data analysis design; Section 5 describes the research hypotheses to be tested in this study; and Section 6 summarizes the study results, discusses the study limitations, and draws a conclusion.

2 Problem statement

The variables affecting internal auditors' efficacy have been studied [7-9, 11, 12, 20]. Numerous research has examined a variety of aspects in attempting to determine why internal audit is inefficient [18, 21]. [22], for instance, found that internal audit's efficacy was negatively impacted by a number of factors, including scarce resources, a lack of skilled internal auditors, understaffed divisions, and a lack of top management support.

Insufficient top management support and competency, in accordance with [6, 22], were the primary causes of internal audit effectiveness deficits, which had a number of negative effects on firms. [23] claim that senior management support, a dearth of internal auditor expertise, and a lack of resources all contribute to the effectiveness of internal

auditors in Jordan. However, the authors found that the intricacy of the work had a negative impact on the effectiveness of internal auditors in the Jordanian public sector.

In order to better understand the relationship between IT (in terms of User quality and System quality) and the efficacy of internal audit in Jordan, this study will examine the moderating effect of management assistance. Thus, the following research issues are put forth:

1. How information technology in terms of User quality is related to internal audit effectiveness?
2. How information technology in terms of System quality is related to internal audit effectiveness?
3. How much does management support influence the relationship between information technology, User quality, and the efficacy of internal audits?
4. How far does management support for internal audit effectiveness and system quality influence the link between information technology?

The study satisfies the following four main research goals by answering the research questions:

1. To research the link between internal audit effectiveness and user quality in the context of information technology.
2. To assess the effectiveness of internal audits and the system quality of the information technology.
3. To examine the moderating effects of the management support variable on the link between internal audit effectiveness and user quality in the context of information technology.
4. To examine the moderating effects of the management support variable on the link between the quality of the information technology system and the efficiency of internal auditing.

3 Literature Review

This section discusses the literature that is pertinent to the study issue. Therefore, linked empirical works are highlighted. The key ideas discussed include internal audit effectiveness, system and user quality, information technology, and managerial assistance. Here is an explanation of each:

3.1 Internal audit effectiveness

The Institute of Internal Auditors' International Professional Practice Framework for Internal audit defines internal audit as a free-standing, impartial assurance and consulting activity. This endeavor has the potential to benefit and enhance an organization's operations. Internal audit employs a rigorous, disciplined strategy to evaluate and improve the effectiveness of control, making it easier for

the organization to achieve its objectives [24]. It also strengthens management discipline and shapes the accuracy, actuality, and comprehensiveness of financial data and business operations [25]. Because of this, internal audit has a significant impact on how successfully firms operate and achieve their goals [2].

The organization will benefit from having an internal auditor, who has the capacity to assist management in overseeing its operations [9]. Internal auditors assist management in carrying out corporate activities by being able to provide the information that managers require to accomplish the organization's objectives. For a corporation to survive, internal audit is crucial in concerns of management and risk [20].

Development of business entities necessitates responsible and open management [4]. Therefore, management must put in place an efficient internal control system to ensure the creation of high-quality financial reports that are useful for business decision-making. High-quality financial reports are produced by organizations with an effective internal control system [14]. The effectiveness of the internal control system can be ensured, however, by a strong internal audit function.

Similar findings from previous research have been reported in the past, demonstrating the efficiency of internal audit in obtaining outcomes that are consistent with specified goals [5]. Internal audit effectiveness is reported as the finished degree-including quality rather than the stated aims, according to [18] found to help the attainment of internal audit goals, Businesses can demonstrate internal audit success by their ability to monitor and improve internal control.

3.2 System quality of Information technology

Consumer perception of website performance as measured by information consumption and transmission is the system's quality [26]. The perceived level of user satisfaction with the website's technical and functional performance is the system's quality [27]. Consumers will place increased importance on system attributes such as website usability, ease of navigation, response speed, and download time while buying online because they must rely on product descriptions and photographs provided by the website to understand products [17]. Customers will find offers with fewer searches and physical expenditures if shopping websites can provide a clear structure, the category items logically, and a choice of possibilities [28].

Additionally, the information system needs to show the social practices and how individuals operate [26]. As a result, the information system is seen as an interdependent social system, where IT is just one part along with an organization's relationships and intellectual capital [29]. IT is, in fact, more than just a technical system with ramifications for behavior [17]. Similar to how [30] referred to human resources as the core of organization,

[31] identified people as one of the crucial elements of information systems.

3.3 User quality of Information technology

The ability of a user was defined by [32] as the capacity of an individual to complete a wide range of tasks related to a job. It is also a component of maturity that is linked to information or abilities that can be learned through education and training. The effectiveness of users has a significant impact on the adoption of accounting information systems and the use of cutting-edge IT inside organizations [33]. According to [17] companies that invest in high-quality IT may have more predictable and lower cash effective tax rates than other companies. These results suggest that businesses who invest in high-quality IT may be able to save more money on taxes while also facing a lesser chance of being taxed. Any company views its employees as a valuable resource, especially those who are competent and reliable while using information technology. Successful resource management, according to [34], depends on user function and well-built personnel function (e.g., recruitment, training, evaluation, counseling, continuing education, labor relations, and compensation administration).

Additionally, many researchers [21] examined the users' roles in information technology acceptance studies. On the one hand, observation revealed that businesses typically overlook the roles of users when evaluating the performance of an information system. On the other hand, users' roles in terms of user quality and personal qualities have been disregarded in well-known IS models and frameworks [33, 35]. Additionally, research on required system utilization in the IS paradigm, particularly in the information system, is rather lacking in comparison to voluntary system usage [31, 36].

3.4 Management support

According to [37], managerial support refers to a special kind of social support that employees experience from their bosses. An extension of organizational support, managerial support relates to how much praise employees feel they receive from their bosses for their achievements and how much they believe managers are concerned about their well-being [38]. In a number of work environments, manufacturing, and knowledge-intensive enterprises, support from managers is positively connected with employees' innovative behaviors [39].

Managerial support is defined as the belief held by staff members that their superiors support their novel and creative ideas [40]. The ability to affect employees' general organizational behavior depends on managerial support [41, 42]. The attainment of organizational goals can be supported by social conditions that enable employee discretionary conduct, which is assumed to be a type of pragmatic or voluntary behavior taken into account by organizational peers. Task performance can also be

improved as a result. Thus, this employee conduct significantly contributes to enhancing job performance and fulfilling organizational objectives [43].

4 Hypothesis Development

The following is a discussion of the four primary research hypotheses that are presented in the current study:

System quality of Information technology impact internal audit effectiveness

User satisfaction (user information satisfaction) and system (system use) are two frequently used characteristics in studies of information systems as a substitute (surrogate) in the measurement of the effectiveness/performance of AIS [17]. [17, 25] looked into the dynamics of tax evasion using tax information technology. The results suggest that IT has the ability to reduce tax evasion. According to [29, 31, 36, 44] research, businesses that use high-quality information technology are able to save more money on taxes while also posing fewer risks of being taxed. found statistically significant associations when they compared the direct correlation between information technology and tax evasion in a comparable investigation [17]. As a result, the following claim is proved:

H1: System quality of information technology impacts the internal audit effectiveness.

User quality of Information technology impact the internal audit effectiveness

There was discussion about a user's capability by [36]. The definition of the concept was given as the user's personal aspiration for aptitude, skill, and power. In contrast, [33, 35] identified the idea as a component linked to extremely successful or effective work implementation. Additionally, effective information system use can enhance both individual and business performance in addition to the assistance offered by skilled individuals [27]. Moreover, regarding the efficiency/performance of AIS [36]. [17] assert that information technology can reduce tax evasion. It is essential that the company has the required hardware and software to support information systems in order to allow users to successfully utilize them. As a result, the assertion that follows is validated:

H2: User quality of information technology impacts the internal audit effectiveness.

Management support as a moderating variable

Having an independent internal audit department and providing internal audit with efficient resources in the areas of staff training, recruitment, and professional development to enhance their competency auditors are linked to management support, per a number of studies [2, 8, 12]. Top management affects organizational performance and impacts the caliber of internal audits, claim [9]. This shows that internal audit effectiveness criteria including expertise,

independence, size, and quality of work accomplished may not be strong enough to have any noticeable impact on internal audit's overall effectiveness, which in turn affects the overall efficiency of organizational performance.

The research by [2, 12] on the idea to build the theoretical framework on internal audit effectiveness, where they argued that internal audit effectiveness is directly impacted by organizational members support, supported the idea of enlisting top management support. Their study's results revealed a strong correlation between organizational member support, which was used as a moderating variable, and internal audit effectiveness. The usage of senior management support as a moderating factor between information technology and internal audit effectiveness in Jordan is so prominently featured in this paper. The advice of [2] emphasized the research of management support as a moderating variable on the association between information technology and internal audit effectiveness. As a result, the ensuing hypothesis is verified:

H3: Management support moderates the positive relationship between System quality of Information technology and internal audit effectiveness.

H4: Management support moderates the positive relationship between User quality of Information technology and internal audit effectiveness.

5 Theoretical Framework

This study suggests a theoretical framework to investigate the moderating impact of management support on the relationship between information technology and internal audit effectiveness in Jordan. The overall structure is shown in Figure 1.

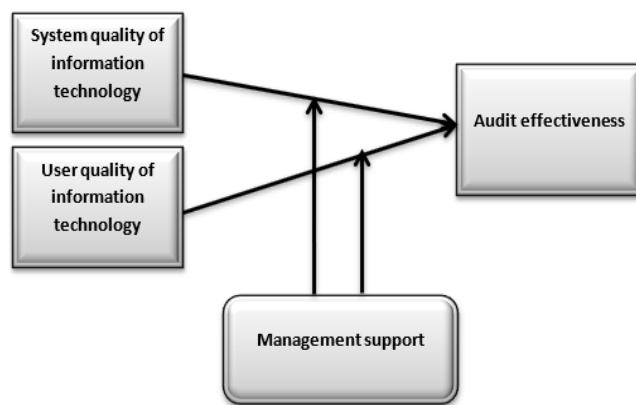


Fig. 1: Theoretical Framework.

6 Research Methodology

The master plan that outlines the procedures and methods to be followed in acquiring and analyzing the necessary information is made up of a research design [17]. The Statistical Package for the Social Sciences (SPSS 23) and other statistical analyses were used to extract meaningful information from data analysis.

The components of the questionnaire employed in the current study were modified versions of those used in a number of earlier studies. Closed-ended questions on a Likert scale from 1 to 5 made up the survey's items. The data was analyzed using SPSS 23 and the values represent the possible replies to each factor. This study used percentage analysis and presents the results in an uncomplicated, understandable way. The responses on the five-point Likert scale with the highest number in each category are selected using data ranking. Cronbach's alpha was utilized in this study to rate internal consistency. The internal consistency shows how the parts are connected. It was suggested to consider the obtained Cronbach's alpha value to be credible if it ranges between 0.70 and 1.00. According to [45], Cronbach's alpha and a coefficient of reliability are statistical methods for achieving dependability but not statistical tests. Reliability in a measurement refers to how closely the measurement matches a notion. One method for assessing consistency strength is Cronbach's alpha. The questionnaire received responses from a total of 172 Jordanian auditors who were selected at random. Due to their thorough understanding of their work, these auditors were able to participate in the study.

7 Data Analysis and Results

Regression analysis was utilized in this study to predict how the system and user quality of information technology would affect internal audit effectiveness in Jordan, as well as how management support would have a moderating influence.

Descriptive statistics are those that analyze data in a way that explains or presents the data as it is, without attempting to draw broad conclusions or generalizations. The purpose of this study was to investigate descriptive statistics with SPSS Version 23. These are the results:

The factors employed in this analysis are summarized in Table 2 above. Based on respondents' responses to nine questions and five alternative alternatives (1, 2, 3, 4, and 5), the variable (System quality) gives a minimum value of 9 and a maximum value of 62, with an average score of 44.87 and a standard deviation of 9.98. Based on replies to nine questions and five alternate answers, (user quality) has a mean score of 40.21 and a standard deviation of 8.61, with a minimum value of 8 and a maximum value of 55. (1, 2, 3, 4, and 5). Based on respondents' responses to fifteen questions and five possible answers (1, 2, 3, 4, and 5), the variable (Audit effectiveness) produces a minimum value of 20 and a maximum value of 97, with an average score of 71.54 and a standard deviation of 13.99. (Management support) also has a range of values between 12 and 52, with an average score of 32.21 and a standard deviation of 11.14.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
System quality	172	9.00	62.00	44.8752	9.98556
user quality	172	8.00	55.00	40.2123	8.61943
Audit effectiveness	172	20.00	97.00	71.5486	13.99018
Management support	172	12.00	52.00	32.2135	11.14565

Sources: Primary data processing with SPSS Ver 23.

The results of a correlation analysis of the major study variables are shown in Tables 2 and 3. There are significant connections between the variables in this study, as shown in Tables 2 and 3. The correlation findings back up the investigation's theories (H1, H2, H3 and H4).

Table 2: Correlation between an Independent Variables and a Moderating Variable.

System quality	user quality	Management support		
System quality	Correlation Coefficient	1.000	.860**	.585**
	Sig. (2-tailed)	.	.000	.000
	N	172	172	172
user quality	Correlation Coefficient	.860**	1.000	.585**
	Sig. (2-tailed)	.000	.	.000
	N	172	172	172
Manag ement support	Correlation Coefficient	.585**	.585**	1.000
	Sig. (2-tailed)	.000	.000	.
	N	172	172	172

Table 3: Correlation between an Independent Variables and a Dependent Variable.

			System quality	User quality	Audit effectiveness
Spearman's rho	System quality	Correlation Coefficient	1.000	.860**	.444**
		Sig. (2-tailed)	.	.000	.000
		N	172	172	172
	User quality	Correlation Coefficient	.860**	1.000	.474**
		Sig. (2-tailed)	.000	.	.000
		N	172	172	172
	Audit effectiveness	Correlation Coefficient	.444**	.474**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	172	172	172

Multiple Linear Regression Analysis

Using linear regression analysis, the effect of the dependent variable on the free variable is evaluated. Regression is the term used to describe a situation when there are two or more independent variables. Table 5 below shows the results of the regression analysis:

Table Error! No text of specified style in document.: Regression Model Summary Statistics of System quality and user quality Variables on Audit effectiveness (N=172).

Dependent Variable	
	(Prob -t statistics in parentheses)
Constant	0.288 (0.002) ***
System quality	0.041 (0.055) *
User quality	0.086 (0.016) **
R ²	0.787
Adjusted R ²	0.775
F statistic	66.334***
Significance of F	0.000
Durbin-Watson	2.067

The result in Table 5 shows that Audit effectiveness is positively related to of the System quality and significant. This result implies that an increase in the System quality leads to an increase in the Audit effectiveness, and supports the argument that when System well quality is, they will be able to monitor the Audit effectiveness. Also, that the user quality is a significantly related to Audit effectiveness. Thus, H2 is supported. This implies that the user quality is affecting the Audit effectiveness.

Table 5: Regression Model Summary Statistics of Management support Moderate the Relationship Between (System quality and User quality) and Audit effectiveness (H3 and 4).

Dependent Variable	
	(Prob -t statistics in parentheses)
Constant	0.288 (0.002) ***
System quality	0.041 (0.055) *
User quality	0.086 (0.016) **
Interaction term Management support * System quality	0.002 (0.954)
Interaction term Management support * User quality	-0.009 (0.736)
R ²	0.787
Adjusted R ²	0.775
F statistic	66.334***
Significance of F	0.000
Durbin-Watson	2.067
Dependent Variable	

***, **, * indicates that regression analysis is statistically significant at 1%, 5%, and 10% respectively

The moderating impact of management support on the link between audit effectiveness and system and user quality is depicted in Table 5. The findings indicate that when Management support is used as a moderating variable, a favorable link between System quality and Audit effectiveness develops.

Also, the results show that with moderating variables, the relationship becomes negative between User quality and Audit effectiveness. The result fails to support hypothesis H4.

8 Conclusions and Directions for Further Research

In addition to examining the effects of system quality and user quality of information technology, this study aims to examine the moderating impact of management support on internal audit effectiveness in Jordan. The following findings were reached based on the results of tests performed on three regression models: The discussion and conclusions of the study demonstrated that management assistance enhances the efficiency and standard of the internal audit program. The study's conclusions, which are in line with earlier research on the topic, show that system quality has a beneficial impact on the effectiveness of internal audits in these firms.

The results disprove our premise that management support mediates between the effectiveness of internal audits and user quality. In accordance with other findings reached by experts who have examined the topic, the findings of this study also show that User quality has a positive impact on the effectiveness of internal audits in these organizations.

By analyzing the effects of system quality, under quality, and employing management support as a mediator in a particular Jordanian scenario, this study adds to the body of literature on internal audit effectiveness. Decision-makers can use the information in this study to develop effective internal audit effectiveness policies and support systems.

The study shows that internal audit effectiveness has made extensive use of managerial support. Additional research is required to address the study's flaws. Future research should look into other industries and employ different techniques. Future studies might go deeper into topics like risk management. These are not covered by this research. The conclusions of this study have a number of drawbacks, the most significant of which is that they cannot be applied to Jordan's public sector. The researchers found a hole in their knowledge of the effectiveness of internal audits. Since some of the sample proved to be difficult to comprehend, the researchers addressed these limitations. The researchers discovered a dearth of research in Jordan and the surrounding area.

Sources of Funding

The authors are grateful to Middle East University for the financial support granted to cover the publication fee of this article.

Lysis at the fund house level, as evidence on its performance is still limited. It is worthwhile to examine how the advantages provided by and the characteristics of fund houses may lead to better performance of the houses themselves and of their funds. Second, the literature has mainly focused on developed markets such as the USA and the UK. Future works may consider other emerging markets, such as the Middle East and South Asia.

Acknowledgement

Sources of Funding: The authors are grateful to Middle East University for the financial support granted to cover the publication fee of this article.

References

- [1] Harasheh, M. and R. Provasi, A need for assurance: Do internal control systems integrate environmental, social, and governance factors? *Corporate Social Responsibility and Environmental Management*, 2022.
- [2] Alqaraleh, M.H., et al., The Mediating Role of Organizational Culture On the Relationship Between Information Technology and Internal Audit Effectiveness. *Corporate Governance and Organizational Behavior Review*, 2022. 6(1).
- [3] Alqaraleh MH, Nour AN. The impact of the audit committee on the timeliness of the annual financial reports in Jordanian companies listed in the Amman Stock Exchange. *International Journal of Critical Accounting*. 2020;11(4):287-98.
- [4] Wang, F., et al., Stock price analysis based on the research of multiple linear regression macroeconomic variables. *Applied Mathematics and Nonlinear Sciences*, 2021. 7(1): p. 267-274.
- [5] Erasmus, L. and P. Coetzee, Drivers of stakeholders' view of internal audit effectiveness: Management versus audit committee. *Managerial Auditing Journal*, 2018.
- [6] Kahyaoglu, S.B. and K. Caliyurt, Cyber security assurance process from the internal audit perspective. *Managerial Auditing Journal*, 2018.
- [7] Oussii, A.A. and N.B. Taktak, The impact of internal audit function characteristics on internal control quality. *Managerial Auditing Journal*, 2018.
- [8] Alkooheji, H., M. Salem Oudat, and B. JA Ali, Ownership Structure and the CEO Compensations: An Empirical Study on Bahrain Commercial Banks. *Information Sciences Letters*, 2021. 10(4): p. 3.
- [9] Ali, B.J. and M.S. Oudat, Board characteristics and intellectual capital performance: empirical evidence of bahrain commercial banks. *Academy of Accounting and Financial Studies Journal*, 2021. 25(4): p. 1-10.
- [10] Al-Hadi, A. and A. Habib, Consequences of state-level regulations in accounting, finance, and corporate governance: A review. *Advances in Accounting*, 2023. 60: p. 100630.
- [11] Kayhan, F., Internal Audit, Internal Control Systems in Finance Industry in the Changing Business Environment, Evidence From Turkey as an Emerging Economy: Banking Applications, Internal Systems, in *Managing Inflation and Supply Chain Disruptions in the Global Economy*. 2023, IGI Global. p. 281-292.
- [12] Harban, F.J.M.J., B.J.A. Ali, and M.S. Oudat, The Effect of Financial Risks on the Financial Performance of Banks listed on Bahrain Bourse: An Empirical Study. *Information Sciences Letters*, 2021. 10(S1): p. 71-89.
- [13] Abdullah, R., Z. Ismail, and M. Smith, Audit committees' involvement and the effects of quality in the internal audit function on corporate governance. *International Journal of Auditing*, 2018. 22(3): p. 385-403.
- [14] Shibly, M., et al., The Relationship between Administrative Empowerment and Continuous Improvement: An Empirical Study. *Revista Geintec-Gestao Inovacao E Tecnologias*, 2021. 11(2): p. 1681-1699.
- [15] Francis, S. and B.U. Imiete, Internal control system as a mechanism for effective fund management of universities in Bayelsa State, Nigeria. *Global Journal of Social Sciences*, 2018. 17: p. 77-91.
- [16] Jasim, Y.A. and M.B. Raewf, Information technology's impact on the accounting system. *Cihan University-Erbil Journal of Humanities and Social Sciences*, 2020. 4(1): p. 50-57.
- [17] Thuneibat, N.S.M., et al., The Mediating Role of Innovation On the Relationship Between Information Technologies and Reducing Tax Evasion. *Information Sciences Letters*, 2022. 11(2): p. 13-23.
- [18] Yusuf, M. and L. Kanji, Effect of internal audit and accounting information system on the effectiveness of internal control. *ATESTASI: Jurnal Ilmiah Akuntansi*, 2020. 3(2): p. 120-125.
- [19] Sofyani, H., H.A. Hasan, and Z. Saleh, Internal control implementation in higher education institutions: determinants, obstacles and contributions toward governance practices and fraud mitigation. *Journal of Financial Crime*, 2021.
- [20] Al Nawaiseh, K.H., et al., Dimensions of Corporate Governance and Organizational Learning: An Empirical

- Study. *Journal of Management Information and Decision Sciences*, 2021. 24: p. 1-11.
- [21] Rahi, S., et al., Investigating the role of unified theory of acceptance and use of technology (UTAUT) in internet banking adoption context. *Management Science Letters*, 2018. 8(3): p. 173-186.
- [22] Suleiman, Z.A., A.U. Hamad, and S. Yussuf, Factors influences the effectiveness of internal audit services at Ministry of Finance and Planning in Zanzibar. *Research Journal of Finance and Accounting*, 2021. 12(2): p. 8-13.
- [23] Alqudah, H.M., N.A. Amran, and H. Hassan, Extrinsic Factors Influencing Internal Auditors' Effectiveness in Jordanian Public Sector. *Rev. Eur. Stud.*, 2019. 11: p. 67.
- [24] Albawwat, I.E., M.E. AL-HAJAIA, and Y.S. AL FRIJAT, The Relationship Between Internal Auditors' Personality Traits, Internal Audit Effectiveness, and Financial Reporting Quality: Empirical Evidence from Jordan. *The Journal of Asian Finance, Economics and Business*, 2021. 8(4): p. 797-808.
- [25] Alshirah, M., et al., The Relationship Between Tax Knowledge and Compliance: An Empirical Study. *Information Sciences Letters*, 2022. 11(5): p. 393-1401.
- [26] Ali, B.J. and I.A.A. AlSondos, Operational Efficiency and the Adoption of Accounting Information System (Ais): A Comprehensive Review of the Banking Sectors. *International Journal of Management*, 2020. 11(6).
- [27] Ali, B.J., W.A.W. Omar, and R. Bakar, Accounting Information System (AIS) and organizational performance: Moderating effect of organizational culture. *International Journal of Economics, Commerce and Management*, 2016. 4(4): p. 138-158.
- [28] Jawabreh, O., et al., Evaluation of The Contents of the Five Stars Hotel Website and Customer Orientation. *Information Sciences Letters*, 2022. 11(4): p. 1077-1085.
- [29] Alawamleh, H.A., et al., The Challenges, Barriers And Advantages Of Management Information System Development: Comprehensive Review. *Academy of Strategic Management Journal*, 2021. 20(5): p. 1-8.
- [30] AL-Qudah, M.K.M., A. Osman, and B.J.A.R. Ali, Effect of human resource polarization, training and development, and human resource stimulation on the strategic planning of human resources: evidence from the Government Ministry in Jordan. *Advances in Environmental Biology*, 2014: p. 675-679.
- [31] Jawabreh, O., et al., The Strategic Deployment of Information Systems Attributes and Financial Performance in The Hospitality Industry. *Information Sciences Letters*, 2022. 11(5).
- [32] Mertins, I.K., D.-S.P. Heisig, and D.-P.J. Vorbeck, *Knowledge management: Best practices in Europe*. 2013: Springer Science & Business Media.
- [33] Shan, R., et al., The influence of accounting computer information processing technology on enterprise internal control under panel data simultaneous equation. *Applied Mathematics and Nonlinear Sciences*, 2022.
- [34] Mwaipyana, H.J., Role of Human Resource Information System in Private Organization Performance: The case of United Bank for Africa Dar es salaam. 2020, Mzumbe University.
- [35] Shniekat, N., et al., Influence of Management Information System Dimensions on Institutional Performance. *Information Sciences Letters*, 2022. 11(5): p. 435-1443.
- [36] Ali, B.J. and M.S. Oudat, Accounting Information System And Financial Sustainability Of Commercial And Islamic Banks: A Review Of The Literature. *Journal of Management Information & Decision Sciences*, 2021. 24(5): p. 1-17.
- [37] Brend, D.M. and D. Collin-Vézina, Stronger together: Workplace social support among residential child welfare professionals. *Child Abuse & Neglect*, 2022. 130: p. 105302.
- [38] Gordon, S., Organizational support versus supervisor support: The impact on hospitality managers' psychological contract and work engagement. *International Journal of Hospitality Management*, 2020. 87: p. 102374.
- [39] Bos-Nehles, A., T. Bondarouk, and K. Nijenhuis, Innovative work behaviour in knowledge-intensive public sector organizations: the case of supervisors in the Netherlands fire services. *The International Journal of human resource management*, 2017. 28(2): p. 379-398.
- [40] Alkhodary, D., et al., Visitor Management System Design and Implementation during the Covid-19 Pandemic. *Information Sciences Letters*, 2022. 11(04).
- [41] Ali, B.J., A.A. Salameh, and M.S. Oudat, The Relationship Between Risk Measurement And The Accounting Information System: A Review In The Commercial And Islamic Banking Sectors. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 2020. 17(6): p. 13276-13290.
- [42] Salameh, A., et al., From Citizens Overview: Which Antecedents' Can Assist to Increase Their Satisfaction Towards the Ubiquity of Mobile Commerce Applications? *International Journal of Interactive Mobile Technologies*, 2020. 14(17): p. 45-55.
- [43] Purwanto, A., The Relationship of Transformational Leadership, Organizational Justice and Organizational Commitment: a Mediation Effect of Job Satisfaction. *Journal of Critical Reviews*, 2020.
- [44] Ali, B.J., et al., Integration of Supply Chains and Operational Performance: The Moderating Effects of Knowledge. *Information Sciences Letters*, 2022. 11(04): p. 1069-1076.
- [45] Alqaraleh MH, Thuneibat NS, Nour AI. The Factors Affecting the Adherence of Islamic Accounting Standards Aaoifi in Jordan. *Journal of Governance and Regulation*/Volume. 2020;9(4).