Impact of Accounting Information System on Internal Audit Quality: Mediating Role of Organizational Culture

Qasim Ahmad Alawaqleh

1 Accounting Department, Philadelphia University, Jordan
Correspondence: Qasim Ahmad Alawaqleh, Accounting Department, Philadelphia University, Jordan.

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Abstract
This study advances the Accounting Information System (AIS) study by exploring the relationship between the AIS internal audit quality. It develops a model based on literature and considers one significant variable of mediation that is organizational culture. The AIS is expected to influence internal audit quality in different contexts, particularly in developing countries. The research model validated using AMOS and SPSS version 25. Based on a sample of 183 internal auditors in Jordanian industrial SMEs, empirical findings support the relationship between AIS and internal audit quality; however, the impact is direct while the organizational culture partially mediates this relationship. The results indicate that the AIS help enhance internal auditors' quality and the organizational culture, ultimately improving internal audit quality. The implications are useful for academics, administrators, and policymakers interested in evaluating the impact of intervening variables on the AIS and the internal audit quality relationship.

Keywords: accounting information system, internal audit quality, organizational culture, industrial SMEs, Jordan

1. Introduction
Accounting Information Systems (AIS) is a mechanism developed to aid in the management and control of matters related to the economic-financial domain of businesses when integrated into the field of Information Technology (IT). This refers to helping the organizations monitor and manages financial irregularities and bankruptcies by diagnosing and orderly, defining them to determine and improve productivity and monitor risk management (Sahawneh, Hayek, & Bshayreh, 2016). AIS is one of the organization's most important technologies that have changed how it collects, manages, stores, and disseminates information (Wibisono & Setyohadi, 2017). AIS are essential for the management of an enterprise and the implementation of internal control systems. Accounting irregularities and financial reporting fraud have exposed inefficiency in internal controls (Bento Regina, Mertins, & White Lourdes, 2018; Rubino, Vitolla, & Garzoni, 2017). The ineffective implementation of internal control is once the factor that AIS has not qualified (FITRIATI, SUSANTO, & Technology, 2017). Thus, the AIS are seen as essential for successful corporate decision-making and management, which play a crucial role in internal auditors' functions and quality (Susanto, 2018). Internal control is used to shield the company from risk or mitigate the risk events' effects. Internal control needs to be incorporated into the information system to ensure financial statements (Chen, Yang, Zhang, & Zhou, 2020). Low-quality auditing leads to business loss, which in turn can lead to other outcomes like a business failure, corruption, and so on. Failed audits led to discussions about the new replacements to be implemented to ensure consistency of the audit (Knechel & Salterio, 2016). Internal auditing activities measure the efficacy of the internal control system, where the concept of internal auditing often requires management intervention reviews to address circumstances that vary from those achieved (D’Onza & Sarens, 2018).

Many scholars have described the usefulness of the internal audits goals and objectives (IA), although they have been interpreted in several ways. A recent study by McNeil et al. (2016) looked at the vital role of culture in various parts of the world. Organizational culture is a crucial element that influences and defines audit consistency (Cole & Martin, 2018; Tomic et al., 2016). An analysis of current literature indicates a consensus that the quality of internal audits is directly affected by the prevailing work environment and values (Bergh, Hinna, Leka, & Zwetsloot, 2016; Jespersen, Hohnen, & Hasle, 2016; Lenning & Gremyr, 2017).

Small and Medium-Sized Enterprises (SMEs) play a significant part in the economy in the industrial sector. The success of industrial SMEs is closely related to the economic development of individual nations. In particular, SMEs...
in the Jordanian industrial sector have been chosen because of many businesses. Industrial SMEs account for 10% of Jordan's GDP (JEGP, 2018).

While several studies of internal audit quality research have been conducted, the researcher's awareness of the relationship between AIS and internal audit quality is still limited due to the changing organizational culture. However, there is a lack of empirical research based on AIS and internal audit quality in developing countries. As a result, this study explores the mediating impact of the organizational culture on the relationship between AIS and internal audit efficiency in the Jordanian industrial business. The findings of this research would be useful in designing effective operational strategies for local companies.

The rest of the paper is structured as follows; the literature review and the proposed conceptual model are set out in section 2. Section 3 sets out the research method that has driven research analysis. The results are given in Section 4. Finally, Section 5 provides for a detailed analysis of the main findings and concludes the paper.

2. Literature Review and Research Model

Understanding of the AIS, internal audit quality and organizational culture factors have drawn significant interest in prior literature (Abdelahi, Arumugam, & Suppiah, 2020; Al-Okaily, Al-Okaily, Shiyyab, & Masadah, 2020; White, Bailey, & Asenova, 2020). The subsections illustrated the relationships between the research constructs.

2.1 AIS and Internal Audit Quality

AIS refers to systems operating data collection functions, processing, classification, and reporting financial activities to provide relevant information to maintain outcomes, guiding knowledge and decision-making (Brandas, Megan, & Didraga, 2015). The accounting documents' qualitative characteristic may also be preserved if an entity has a successful internal audit framework. Effective audit control helps the management of companies to use more positive information to conduct their business practices correctly and to assess the efficiency of the company (Turner, Weickgenannt, & Copeland, 2020).

Internal audit primary role in performing transactions financial reporting process and such AIS frameworks supported them in their work (Trigo, Belfo, & Estebanez, 2016). In the context of the relationship between AIS and internal audit quality, the previous studies found that AIS has a significant impact on internal audit quality (Almaliki, Rapani, Khalid, & Sahaib, 2019; Ogundana, Ojeka, Ojua, & Nwaze, 2017; Rapani & Malim, 2018). As a result, it found that the AIS have a profound impact on the efficacy of internal audit and internal control within organizations.

2.2 Organizational Culture and Internal Audit Quality

Organizational culture is also seen as a collection of core beliefs and values held by members of an organization (Kaouache, Brewer, & Kaouache, 2020). If these beliefs and values are clearly defined and firmly held, culture is considered a robust culture (Stephan & Pathak, 2016). Organizational culture is at the core of the organization's operations and affects its overall performance and the quality of its product/service (Salih & Hla, 2017). The literature on culture and audit process believes that the country's culture affects its audit environment, which eventually influences the audit process (Abdelahi et al., 2020). The previous studies showed that the organizational culture has a substantial effect on the quality of internal audit in the sense of the relationship between organizational culture and the internal audit quality (Abdelahi et al., 2020; Alzeban, 2014; Kaouache et al., 2020; Salih & Hla, 2017). As a result, the culture has had a significant influence on internal auditing quality within organizations.

2.3 AIS and Organizational Culture

The organizational culture element is the foundation for the best performing accounting information system (HA, 2020). Culture plays a significant role in developing a standard system of accounting information (Kwarteng & Aveh, 2018). The previous studies showed significant relationships between AIS and organizational culture (Aldegis, 2018; HA, 2020; Kwarteng & Aveh, 2018). As a result, the AIS have a significant impact on the culture of the organization. The organizational culture element is the foundation for the best performing accounting information system (HA, 2020). Culture plays a significant role in developing a standard system of accounting information (Kwarteng & Aveh, 2018). The previous studies showed significant relationships between AIS and organizational culture (Aldegis, 2018; HA, 2020; Kwarteng & Aveh, 2018). As a result, the AIS have a major impact on the culture of the organization.

3. Research Model and Hypotheses

There are numerous studies examining internal audit quality, including organizational culture and AIS (Abdelahi et al., 2020; Aldegis, 2018; Almaliki et al., 2019; Alzeban, 2014; HA, 2020). An analysis of the existing studies found that organizational culture and AIS play an important effect on internal audit quality. The research model is illustrated in figure 1, for examining the mediating role of organizational culture on the relationship between AIS and...
internal audit quality in Jordanian industrial SMEs.

Organizational Culture

Internal audit quality

AIS

H1

H2

H3

H4

Figure 1. Research model

Based on the analysis of previous studies, the hypotheses of this research are:

H1: AIS has a positive effect on internal audit quality.

H2: AIS has a positive effect on organizational culture.

H3: Organizational culture has a positive effect on internal audit quality.

H4: Organizational culture has a positive effect on the relationship between AIS and internal audit quality.

4. Method

The data were gathered using a questionnaire; it consists of 12 questions regarding the research factors adopted from previous studies. For instance, AIS includes 4 adapted from Ayoub, Potdar, Rudra, and Luong (2020) and (Napitupulu, 2018), organizational culture include 4 items adapted from González-Rodríguez, Martín-Samper, Köseoğlu, and Okumus (2019), Adeinat Iman and Abdulfatah Fatheia (2019), and Di Stefano, Scrima, and Parry (2019); and internal audit quality items adapted from Agyei-Mensah Ben (2019), Dao, Xu, and Liu (2019), and Beck, Gunn, and Hallman (2019). The respondents were asked to test their insight into the five-point Likert-scale research frameworks in which 5 symbolized 'strongly agree,' 4 symbolized 'agree,' 3 symbolized 'Neutral,' 2 symbolized 'Disagree,' and 1 symbolized 'Strongly disagree.' The questionnaire has been circulated to internal auditors of Jordanian industrial SMEs to evaluate their responses. Data were collected using the survey questionnaire. For sampling the respondents, a random sampling technique was used. A total of 240 questionnaires were distributed; only 183 were available; the response rate was 76.3%. The survey was performed in the conventional manner in which the participants were handed out the questionnaires in person. Due to the adequacy context, distribution assumptions, sample size, and design requirements, this study applied the AMOS and SPSS version 25.

5. Result

5.1 Measurement Model

Measurement by Kaiser-Mayer-Olkin (KMO) of all factor loadings was greater than 0.50. The Cronbach alpha was used for internal consistency checking, with the variables described in Table 1. The overall condition at the cut-off was 0.7. Thus, the overall values were above 0.7, showing that the overall scale and the factors derived are adequate reliability (Al Shbail, Salleh, & Nor, 2018; Obeid, Salleh, & Nor, 2017; Sl Shbail, Salleh, Nor, & Nazli, 2018). The structural models were used as well as the measurement estimates. Thus, the content validity of the research constructs is presumed (see table 1). The Confirmatory Factor Analysis (CFA) was used for checking the convergent validity; The CFA results (RMSEA = 0.066; NFI= 0.903; CFI= 0.954; p = 0.000) suggested that the overall indices matched very well with the data and concluded that the research model is satisfactory (see Figure 2).
Table 1. Measurements reliability and validity

| Constructs            | Items code | Factor loading | KMO   | Cronbach’s Alpha |
|-----------------------|------------|----------------|-------|------------------|
| AIS                   | AIS1       | .864           | .802  | .854             |
|                       | AIS2       | .816           |       |                  |
|                       | AIS3       | .854           |       |                  |
|                       | AIS4       | .803           |       |                  |
| Organizational culture| OC1        | .784           | .742  | .729             |
|                       | OC2        | .755           |       |                  |
|                       | OC3        | .789           |       |                  |
|                       | OC4        | .745           |       |                  |
| Internal audit quality| IAQ1       | .844           | .771  | .815             |
|                       | IAQ2       | .736           |       |                  |
|                       | IAQ3       | .783           |       |                  |
|                       | IAQ4       | .848           |       |                  |

5.2 Hypothesis Testing

Structural Equation Modeling (SEM) using AMOS was employed to test the hypothesized construct. This study explored the structural model through AIS (as an exogenous construct), organizational culture, and internal audit quality (as endogenous constructs). Estimates of the structural coefficient provide the basis for evaluating the proposed hypotheses.

The AIS significantly and positively impacts the internal audit quality ($\beta=.724$, C.R=7.383, $p<0.01$), as illustrated in figure 3 and table 2. Thus the H1 is supported. This finding is consistent with Almaliki et al. (2019) and Rapani and Malim (2018).
Figure 3. Result of Hypothesis 1

Table 2. Result of Hypothesis 1

| Relationship         | Estimate | S.E.  | C.R.  | P       | Decision |
|----------------------|----------|-------|-------|---------|----------|
| Internal_Audit_Quality | <--- AIS | .724  | .098  | 7.383   | ***      | supported |

Regarding H2, this research found that AIS significantly and positively impacts the organizational culture ($\beta=.489$, C.R=5.411, p<0.01), as illustrated in figure 4 and table 3. Thus the H2 is supported. This finding is supported by Ali, Omar, and Bakar (2016).

Figure 4. Result of Hypothesis 2

Table 3. Result of Hypothesis 2

| Relationship         | Estimate | S.E.  | C.R.  | P       | Decision |
|----------------------|----------|-------|-------|---------|----------|
| Organizational_Culture | <--- AIS | .489  | .090  | 5.411   | ***      | supported |

Further analysis showed that organizational culture positively impacted the internal audit quality ($\beta=.749$, C.R=6.375, p<0.01), as illustrated in figure 5 and table 4. Thus the H3 is supported. This study supports evidence from previous observations (Alzeban, 2014).
Moreover, to observe the mediator role of organizational culture on the relationship between AIS and internal audit quality. The first phase involved the inclusion of the research constructs (AIS, organizational culture and internal audit quality (see figure 6 and Table 5), inclusion of the mediator construct (organizational culture) decreased the value of $\beta$ and C.R in the relationship between AIS and internal audit quality ($\beta=.496, \text{C.R}= 4.933, p>0.01$). This indicates that organizational culture plays a partial mediation on the relationship between AIS and internal audit quality; thus, H4 is supported. This finding is in agreement with this obtained by (Hoque, 2018).
6. Conclusion

This research purpose was to propose and establish a conceptual model for AIS and internal audit efficiency and validate its structure in Jordan’s industrial SMEs. The validation and reliability analysis showed further reliability of the model and its constructs. This study explored organizational culture as a mediator between AIS and internal audit quality and found that the organizational culture plays a significant role in such a relationship and is stated to be partially mediated by organizational culture. This research finding provides empirical evidence that supports AIS’s important position in audit quality and organizational culture. This research has practical consequences for practitioners and managers. It provides practitioners with the knowledge required to enhance the audit quality of any organization. It indicates that AIS and organizational culture in SMEs are essential elements for the quality of the audit. It allows SME management to know what factors are critical for improving internal auditors’ quality. Therefore further studies should be performed to connect the relationship between the AIS and the internal audit quality. It is expected to focus on the other variables for future research and compare the results with the other industry instead of the survey study.

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