Glovento Journal of Integrated Studies (GJIS) | ISSN: 3117-3314
Volume 1 (2025) | Article 12

Factors Influencing External Auditors' Intention to Adopt E-auditing: The Moderating Role of Technological Self-Efficacy

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Abstract- E-auditing technology is still very new in Jordan and many other developing nations. This study looks at the variables influencing Jordanian audit firms' intentions to adopt E-auditing. This paper presents a methodology for adopting E-auditing that incorporates important elements from earlier studies with other, as-yet-undiscovered elements. The data was analyzed using information provided by 126 auditors from various Jordanian audit organizations. Top management support, technological compatibility, and competitive pressure had the biggest effects on the intention to adopt E-auditing technology. It has been discovered that the relationships between TEO factors and the intention to adopt E-auditing technology are moderated by technological self-efficacy.

I. Introduction

Digital transformation is being embraced by industries more and more, especially in auditing and accounting. This change was sped up by the COVID-19 pandemic, which encouraged the use of cutting-edge technological tools that are now necessary for distant operations[1]. Social distancing tactics made remote work the norm in auditing, which created difficulties for duties that typically required in-person encounters. But thanks to efficient solutions offered by cutting-edge technologies, industry practices have changed and the shift to remote auditing has been made possible[2].

The COVID-19 pandemic has presented auditors with unprecedented problems, requiring them to adjust and employ innovative methods to collect evidence[3]. Although the usage of data analytics and virtual meetings has increased, these advancements may have affected their decision-making and increased the possibility of errors or fraud. The epidemic has also highlighted the importance of having robust internal controls in place at firms and the need for auditors to be flexible and use technology to conduct remote audits.The COVID-19 pandemic has forced auditors to work in a digital environment, which restricts their capacity to obtain direct audit evidence and compels them to rely on remote tactics like virtual interactions and electronic records [4].

Numerous studies have emphasized the potential applications of E-auditing across various industries. Faster transactions, transparency, security, and cost savings are just a few of the operational and strategic advantages it can offer to various organizational processes and tasks [2, 4, 5].Previous studies on the adoption of e-auditing have primarily been conceptual in nature and have taken the form of case studies. Studies on the adoption of e-auditing have been published, however the most of them are qualitative in nature and merely provide the theoretical and conceptual basis for a deeper understanding of the adoption process. Quantitative studies to determine the influence of various factors on organizations' adoption of technology and innovative processes have received little attention [6]. The purpose of this work is to add to the few quantitative empirical research that have been done in this field.

This work contributes. By introducing the Technology-Organization-Environment (TOE) framework [7, 8] from the Information Systems (IS) area and offering empirical proof of its relevance to E-auditing research, it first improves the E-auditing literature. Improving auditing processes requires a greater scholarly understanding of how audit companies use e-auditing technologies, which is something that the TOE model helps to achieve. Second, by combining the TOE model with Social Cognitive Theory, the study advances the model [9].This integration provides a means of resolving the conflicting results obtained by earlier studies that employed the TOE paradigm [4, 10, 11]. The study specifically suggests that, within the same TOE framework, auditors' technology adoption behavior may be influenced by their levels of technological self-efficacy. The study creates and evaluates an

empirical model to investigate this, in which the impact of the TOE framework on the adoption of E-auditing is moderated by technological self-efficacy. This multidisciplinary approach offers important insights and promotes additional theoretical improvements in the use of modern technologies in auditing, which is crucial given the paucity of existing research on e-auditing in the auditing profession.

II. Literature Review And Hypotheses Development

2.1 Technical compatibility and E-auditing adoption

Technical compatibility, which can be defined as the degree to which the innovation is in line with the current values, earlier practices, and demonstrating the needs of potential prospective adopters, is a crucial factor in determining whether a new technology is adopted [12]. Because of its behavior pattern, current values, and experience, compatibility is regarded as an internal organizational issue. It is evaluated to what degree these organizational traits may be accommodated by a cutting-edge technology [13]. Compatibility is defined practically as the degree to which innovations in e-auditing may be readily absorbed and integrated with the organization's current procedures and infrastructure. Higher levels of compatibility can lead to more effective adoption. Thus, the following hypothesis was put forth in this study:

H1a: Adoption of E-auditing is positively impacted by compatibility.

2.2 Top management support and E-auditing adoption

The importance of top management in assisting with information system projects was emphasized in earlier research [14]. Since adopting new technology requires resource allocation, service integration, and process re-engineering, top management support is crucial [15, 16]. When top management sees the advantages of E-auditing, they will probably provide the resources needed to embrace it and persuade the members of the organization to make the shift [4]. Given the backing of the management team, organizations would think about expanding their usage of E-auditing services, as recommended by the literature on IT innovation. Therefore, the study's hypothesis was as follows:

H1b: Adoption of E-auditing is positively impacted by top management support.

2.3 Competitive pressure and E-auditing adoption

Environmental factors like peer pressure, the rate of technical change, outside assistance, government regulations, competitive pressure, trading partners' preparedness, coercive customer influences [17, 18] all have an impact on a company's decision to use e-auditing. Competitive pressure was the element that our framework took into account. Porter [19] propose that contemporary technologies change the laws of competitive games, reorganize the composition of the industry, and eliminate innovation in outperforming competitors.Businesses can gain improved market insight, increased operational efficiency, and more precise access to real-time data by embracing competitive pressure [8]. It has been suggested that the experience of fierce rivalry is a crucial determinant of IT adoption. Thus, the following was the study's hypothesis:

H1c: Adoption of E-auditing is positively impacted by competitive pressure.

2.4 Moderating role of technological self-efficacy

Bandura [9] used social cognitive theory to conceptualize self-efficacy. The degree to which a person thinks they are capable of embracing a new technology is known as their self-efficacy[20]. The amount of energy expended, the time spent conquering the obstacles, and the pattern of behavior displayed by the individual are all determined by self-efficacy[21].People with high levels of self-efficacy are more prone to believe that they should perform difficult jobs. The degree of self-efficacy at the adoption level of E-auditing in audit firms will be the main subject of this study. As self-efficacy rises, people will feel more confident embracing new technologies like E-auditing. The significance of technology self-efficacy in influencing user behavior in many contexts was emphasized by the literature [22, 23]. The social cognitive hypothesis (Bandura, 2001) states that auditors' ability to engage with E-auditing increases their confidence, which in turn creates a favorable impression of the net benefit and eventually leads to their adoption of E-auditing. This study is

necessary because there aren't enough empirical research that look at how self-efficacy affects the adoption of E-auding. It is possible to formulate the following formal hypothesis based on previous claims:

H2a: Technological self-efficacymoderates the relationship between compatibility and adoption of E-auditing.
H2b: Technological self-efficacymoderates the relationship between top management support and adoption of E-auditing.
H2c: Technological self-efficacymoderates the relationship between competitive pressure and adoption of E-auditing.

III. Method

3.1 Sample

The participants are chosen from audit firms operating in Jordan. Two hundred questionnaires were sent out. In the end, 132 completed surveys were sent back. Nevertheless, six responses have been eliminated following a number of dataset checks, such as the identification of missing data, inadequate information, and a comparison of early and late responders. With a 63% response rate, the final dataset had 126 valid responses. This proportion of surveys that were sampled and returned is deemed adequate.

IV. Analytical Strategy

For several reasons, the partial least squares (PLS) method was used in this study to analyze the suggested model and its hypotheses. With an emphasis on theory creation, the PLS is recommended for predictive research models [24]. Because PLS is appropriate for exploratory research, it was chosen for this study, which was one of the earliest attempts to develop a theoretical model that examines the factors influencing Jordanian auditors' acceptance of E-auditing [25, 26]. Furthermore, auditing and accounting studies frequently employ the structural equation modeling (SEM) approach, which has gained popularity [27, 28]. Furthermore, PLS-SEM is gaining popularity due to its ability to model latent constructs for small to medium-sized datasets and nonnormality [29]. Reflective measurement models are used to construct each variable. Because latent constructs exist irrespective of the measures utilized, differences in the constructs can account for discrepancies in item measurements. The measurement model was initially assessed when the SmartPLS was utilized for the study in order to determine how the observed items were loaded into the model's constructs. By examining the relationships between the constructs, the structural model evaluation may make it possible to test hypotheses.

4.1 Measurement model examination

According to Sarstedt, Ringle [30], the standardized loadings (λ) of each item can be used to determine its reliability; a loading greater than 0.70 is considered preferable. The constructions items loadings (λ) given in Table 1 are significant and more than 0.70 in terms of the measurement model quality. Moving on to construct reliability, Dijkstra-Henseler's rhoA (ρA), Cronbach's alpha (a), and composite reliability (CR) are all frequently used. The final analysis was employed in this investigation as, according to recent advancements, it is the most reliable method of estimating reliability [31].The ρA scores of the constructions exceeded the 0.70 limits. In addition, Dijkstra and Henseler (2015) state that the CR, a, and rhoA should be greater than 0.70 but less than 0.95. As can be seen from the numbers in Table 1, the AVE value in this case was greater than 0.50 (AVE>0.50), meaning that its indicators account for 50% or more of the concept variance [32]. Overall, enough data was gathered to substantiate the constructions' dependability. The values determined the measurement model's internal consistency (see Table 1).

This study calculates the Heterotrait–Monotrait ratio (HTMT) in order to assess the discriminant validity. The discriminant validity of the constructs is evaluated using the HTMT in the context of PLS-SEM. The HTMT criterion is calculated using Smart-PLS software. The HTMT criterion results are shown in Table 2, and each latent variable has an HTMT criterion of less than 0.085. Therefore, the HTMT approach is used to establish discriminant validity [33].

Table 1. Measurement model results.

Constructs	Items	Loadings	α	rho_A	CR	AVE
Technological compatibility	TC.1	0.835	0.829		0.845	0.667
	TC.2	0.902		0.884		
	TC.3	0.842				
Top management support	TMS.1	0.876	0.813	0.866	0.866	0.711
	TMS.2	0.921				
	TNS.3	0.917				
Competitive pressure	CP.1	0.796	0.883	0.915	0.917	0.698
	CP.2	0.827				
	CP.3	0.784				
Technological self-efficacy	TSE.1	0.900	0.851		0.896	0.705
	TSE.2	0.938		0.898		
	TSE.3	0.886				
E-auditing adoption	E-A.1	0.834	0.840		0.830	0.715
	E-A.2	0.872		0.832		
	E-A.3	0.918				

Table 2. Discriminant validity assessment using the HTMT method.

Construct	1	2	3	4	5
Technological compatibility	-				
Competitive pressure	0.413				
Technological self-efficacy	0.622	0.713			
E-auditing adoption	0.508	0.498	0.645		
Top management support	0.368	0.537	0.376	0.734	-

4.2 Structural model examination

Examining the structural model estimates comes next, following the establishment of the constructs' validity and reliability. This evaluation is essential to comprehending the model's predictive power and the connections between its elements. As with measurement models, path models are evaluated using a methodical process. To guarantee unbiased coefficients, VIF is first used to check for collinearity concerns. After estimating the path coefficients, researchers typically use p-values and bootstrap confidence ranges to assess their statistical significance. Both direct and indirect impacts are taken into consideration when examining the significance of the interactions. The coefficient of determination, which shows how linked external variables explain variance in endogenous variables, is used to assess the model's predictive power. The impact of eliminating an external variable is measured by the effect size, which is reflected in the change. Hair Jr et al. (2021) offer criteria of 0.02 (small), 0.15 (medium), and 0.35 (large) for interpreting effect size magnitudes; values less than 0.02 signify no effect. Stone-Geisser's, which is acquired during the blindfolding process, is used to assess the predictive significance of the model. The predictive importance of exogenous characteristics for the endogenous variable under consideration is supported by positive values. Lastly, the bootstrapping method is used to determine the statistical significance of the proposed associations.

The values for the endogenous constructs are examined in order to ascertain the degree of variability that can be accounted for by the exogenous variables linked to them, as shown in Table 3. According to the standards set by Aburumman, Omar [34], the value for "E-auditing adoption" (0.718) is considered significant. The effect size matrix and predictive relevance for the aforementioned variables are also included in Table 3.The initial formative constructs, "technological compatibility," "top management support," "competitive pressure," and "technological self-efficacy," have small to medium effects on the endogenous variables that make up "E-auditing adoption," according to the same assessment guidelines. All of the values are strictly positive, confirming the predictive importance of the endogenous components. Furthermore, the total predictive relevance is noticeably great, with values above 0.23. Finally, path coefficients and associated p-values are shown in Table 3, which shows the relevance of each proposed path.

Table 3. Structural model evaluation

Construct	R^2	Adj. R^2	f^2	Q^2
Technological compatibility	-	-	0.193	-
Top management support	-	-	0.211	-
Competitive pressure	-	-	0.116	-
Technological self-efficacy	-	-	0.203	-
E-auditing adoption	0.718	0.714	-	0.233

Table 4. Hypotheses testing

Structural path	Coef (β) and (T Statistics)	P-Values	Remarks
H1a: Technological compatibility->E-auditing adoption	0.261 (2.416)	0.004	Supported
H1b: Top management support->E-auditing adoption	0.293 (3.228)	0.000	Supported
H1c: Competitive pressure->E-auditing adoption	0.189 (2.004)	0.037	Supported
H2a: Technological compatibility*Technological self-efficacy*E-auditing adoption	0.168 (1.994)	0.048	Supported
H2b: Top management support*Technological self-efficacy*E E-auditing adoption	0.178 (2.103)	0.032	Supported
H2c: Competitive pressure*Technological self-efficacy*EE-auditing adoption	0.182 (2.114)	0.025	Supported

V. Conclusions

The purpose of this study was to understand the factors that influence an auditor's choice to adopt E-auditing technology. Numerous benefits of integrating E-auditing into the decision-making process are described in the literature on IT and E-auditing (Jaradat et al., 2022b). Adoption of E-auditing systems provides auditors with pertinent information that they can utilize to improve decision-making and accomplish the ultimate goal of their organization, which is to increase profit. The factors that contribute to the effectiveness of E-auditing systems inside organizations functioning in poor countries have not been thoroughly studied in many research. The literature on audit companies' adoption of E-auditing systems shows a lack of empirical research that examines the factors that influence E-auditing adoption using theories like TOE and Social Cognitive Theory.

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