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Factors Influencing the Continuance Intention to Use Accounting Information System in Jordanian SMEs from the Perspectives of UTAUT: Top Management Support and Self-Efficacy as Predictor Factors

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Abstract: The primary objective of this study is to explain the factors that influence the continuance intention of accountants to use an accounting information system (AIS) in the context of Jordanian small and medium-sized enterprises (SMEs). Accountants are the main AIS users, and their system acceptance and use are crucial to evaluating the successful implementation of the system. The study conducted a cross-sectional survey on SMEs that have fully implemented an AIS. The proposed framework of the study is based on the extended unified theory of acceptance and use of technology (UTAUT) model and top management support (TMS). The results revealed that the examined variables, namely effort expectancy, performance expectancy and facilitating conditions, have a positive effect on the continuance intention of accountants to use AIS, with TMS having a significant and negative effect on such intention to use. In addition, social influence was found to be significantly related to continuance intention, confirming the need to support technologies such as AIS among SMEs. The study findings contribute to UTAUT theory as they supported the effects of TMS on continuance intention to use and established the study framework measurement accuracy in the context of Jordanian SMEs.

Keywords: AIS; unified theory of acceptance and use of technology; continuance intention to use; SMEs; top management support; self-efficacy

1. Introduction

The challenges faced by information system (IS) usage, specifically an accounting information system (AIS), in tackling the development of new strategies for the effective delivery of services have often been undertaken through information technologies (ITs) (Alsyouf and KuIshak 2018; Lutfi 2021; Karaman Aksentijević et al. 2021). However, regardless of the number of empirical findings on the benefits of IT employment in AIS, a gap still exists in the satisfaction level among accountants and management when it comes to IT use (Buntin et al. 2011). Generally speaking, the culture of professional accountants makes them positively inclined towards innovation adoption (Alamin et al. 2015; Tiron-Tudor et al. 2021) to effectively meet the demands of their job, and this has played a key role in affecting their decisions and behaviour towards IT usage (Alshirah et al. 2021b).

In the field of IS research, the post-adoption IT behaviour has come into the discussion limelight (Almaiah and Al-Khasawneh 2020; Venkatesh et al. 2011; Bhattacherjee and Lin 2015). Several tactics have been adopted to promote innovation adoption among potential users, but eventually, the long-term viability of innovation use can be predicted through the continuance behaviour of the user. In this study, the underpinning model proposed by Venkatesh et al. (2011) is extended to shed light on the post-adoption behaviour of AIS users.

More importantly, there is a scarcity of empirical studies on the differentiation between the pre- and post-adoption (continued usage) attitudes and beliefs of users (e.g., Tam et al. 2020; Karahanna et al. 1999; Bhattacherjee and Premkumar 2004; Venkatesh et al. 2011; Bhattacherjee and Lin 2015). This differentiation has been evidenced to be crucial in furthering the understanding and management of occurrences throughout time (Almaiah et al. 2022a; Karahanna et al. 1999). In relation to this, the adoption intention of a potential adopter is an exclusive function of normative pressure, with attitude being the only determinant of user/adopter intention. The attitude of a potential adopter/user hinges on a diverse group of technology features, including usefulness perception, ease of use, demonstrability of results, trialability and visibility as well as post-adoption attitude and influential beliefs connected to the enhancement of usefulness and image perceptions (Karahanna et al. 1999). Authors that dedicated their work to consumer's behaviour (Howard and Sheth 1969) and theorists of cognitive dissonance (Cummings and Venkatesan 1976) have supported the adoption-usage differences and contended that product use may change the perception, attitude and need of an individual on the basis of their actual product usage. Consequently, the beliefs motivating post-adoption use of the innovation may differ from those that stimulated its initial adoption/usage.

The usage of AIS as an IS is mandatory to achieve the effective delivery of service, enhanced efficiency, decision-making promotion and management enhancement (Alamin et al. 2015; Lutfi et al. 2016). In other words, AIS application is crucial to the adaptation of best practices and their development. Accounting information provided by AIS is required by the manager (decision maker) to establish and predict the business's future strategic objectives (Lutfi 2022). AIS usage, when successful and effective, has an important role in improving the businesses goals and performance. Therefore, to achieve successful decision making, accounting information needs to be useful, high quality, and relevant in the decision-making process.

SMEs all over the globe are currently faced with the challenges of incurring high costs and insufficient resources, but judging from the business environment of late, SMEs are at the top of the list in terms of risk exposure in comparison to their larger counterparts. In other words, SMEs are more susceptible to failure in the competitive knowledge-oriented business environment (Alshirah et al. 2021d). Related studies (Cook et al. 2012; Frazier et al. 2013) suggested that smaller firms are more likely to face failure in the first five years of their inception, and Fritsch and Noseleit (2013) revealed that rates of employment and national income are influenced by the failure of SMEs. Smaller firms are also known to undergo job creation and elimination faster than larger ones; thus, a large number of jobs disappear when the firms fail.

With fast accounting information access, effective communication and enhanced management among the many benefits reaped by SMEs through IT, IT usage has thus become a prerequisite for the implementation of best practices (Alamin et al. 2015). AIS needs to be viewed as a significant and enriching accounting information source because its efficient accounting records and successful implementation influence entire business processes (Lutfi 2020). IT has clearly been transforming operations in every field all over the world, and throughout the years, developed nations have been successful in implementing IT in their economies, including SMEs. On the other hand, developing nations in the Middle East have been lagging behind in their implementation, with government-funded SMEs requiring urgent professional IT usage (Alshirah et al. 2021d; Lutfi et al. 2022).

Jordan is one of the Middle Eastern nations currently facing challenges connected to accessibility, inefficient resource usage, ineffective management and unsuitable AIS. Therefore, regardless of their AIS implementation, the majority of developing nations like Jordan are still facing countless challenges, which include poor AIS usability, lack of usage and lack of ease of use. In other words, the promise of providing numerous benefits may remain unmet, and work may continue to suffer as employees remain unlearned and unaware. Owing to such difficulties, staff performance may be adversely influenced, thus decreasing their productivity (Alshirah et al. 2021c), with some users perceiving

the arduous, challenging and annoying usage of AIS (Lutfi et al. 2017). System issues may decrease ease of use, user performance and productivity, all of which may adversely influence the continuance intention of users to use AIS post-implementation, ultimately leading to the return to paper-based management and documentation of information.

What is critical to AIS usage is management support because it can inspire and motivate AIS adoption among SMEs (Lutfi et al. 2017). Additionally, knowledge and understanding of AIS among managers could minimise confusion concerning its launch, implementation and use, as with other innovations (Alamin et al. 2015; Thong 1999). According to Boonstra and Broekhuis (2010), the conviction and support of management towards IS functionality would affect its usability level, with a lack of support leading to plummeting personnel morale and an eventual disregard of AIS usage (Alsyouf and KuIshak 2018). Lack of management support towards AIS implementation and usage may lead a firm to fall short of achieving organisational objectives and aims as well as specific goals connected to delivery of service (Davidson and Heslinga 2006; Ludwick and Doucette 2009). Ineffective tactics among management for facilitating adoption behaviour throughout different phases may also lead to negative outcomes, which may result in an overall minimisation of IS effectiveness (Liao et al. 2009) or the system's halt of use. Therefore, manager's support is of utmost importance.

The realisation of IT benefits among organisations requires understanding user behaviour, which generally fails because of individuals' way of utilising technology (e.g., AIS) (Seethamraju et al. 2018; Xu et al. 2015). There are strategies that can be adopted to boost innovation adoption, but the long-term viability of new ISs largely depends on the continuance behaviour of users rather than their initial adoption decisions (Tam et al. 2020; Venkatesh et al. 2011). Past research on post-adoption in the IS field has mainly focused on continuance usage (a post-adoption behaviour), and based on such research, continuance intention to use IS is crucial for companies' successes in a competitive market, owing to the benefits provided to the companies' investments (Alsyouf and KuIshak 2018). User retention has become significant for industries, including mobile services, with such businesses benefiting from knowing the way users develop continuance intention, after which they are able to provide new social apps to satisfy the needs of users (Albashrawi and Motiwalla 2019; Hsiao et al. 2016).

It is imperative to indicate that the widely held works employing the UTAUT were directed in Western nations, and few have been utilized in the context of AIS in Jordan, which has a diverse culture. Thus, this study aims to examine the factors that affect the continuance intention of accountants towards AIS usage in Jordanian SMEs. This objective involves extending the unified theory of acceptance and use of technology (UTAUT) by considering continuance intention as an endogenous variable and top management support (TMS) as the exogenous factor. The results could help in providing significant insights for policy makers and owners/managers to counter the challenges encountered in the Jordanian SMEs sector (Lutfi et al. 2017). Accordingly, the author addresses the main research question as follows: How do AIS drivers influence the continuance intention of users to use the system?

This paper is organised the following way. In Section 2, the theoretical framework and development of hypotheses are presented. This is followed by Section 3, which explains the research methodology, and Section 4, which contains the data analysis and results. Section 5 discusses the findings of the study. Lastly, Section 6 presents the conclusion, study contributions and future research recommendations.

2. Theoretical Framework and Hypothesis Development

The understanding behind the reason why potential users accept and use technology in relation to IS is quite crucial, and the UTAUT model was proposed and developed by Venkatesh et al. (2003) with this purpose in mind. The UTAUT model is a combination of its eight predecessors, including the technology acceptance model (TAM) by Davis (1989) and TAM2 by Venkatesh and Davis (2000). In the current study, the authors primarily

developed the model to determine the way users accept new technology and the facilitating factors that influence such acceptance. The UTAUT encapsulates the notion of technology acceptance and forms such notion into a single view, where technology acceptance theories and models are combined as one (Alsyouf and KuIshak 2018). As a result, some studies dedicated to IT have adopted the UTAUT to examine the factors in both organisational and non-organisational environments (Venkatesh et al. 2011).

In other words, the UTAUT is made up of a combination of factors from preceding models that affect intention towards IT usage and its actual usage. There are seven constructs in UTAUT that affect use intention or actual use (Venkatesh et al. 2011). The four key ones are performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FCs). These four are direct determinants of user acceptance and usage behaviour, and they focus on the perception of users on system usefulness and how it increases productivity. The factors also shed light on the ease of use of the system among users. Additionally, significant individuals in the workplace affect individual behaviour when it comes to IT usage, and their perceptions of the resources that support such usage may have significant effects as well (Brown and Venkatesh 2005; Venkatesh et al. 2003).

However, despite being the combination of the optimum factors obtained from the models before it, UTAUT itself has its own weaknesses (Alsyouf and KuIshak 2018), one of which is its insufficient consideration of the impact of individual factors on intention (Dadayan and Ferro 2005). In this regard, Thatcher and Perrewe (2002) revealed that IT/IS literature has presented evidence reflecting the effects of individuals differences on IT usage. Accordingly, it is crucial to realise the nomological net of the effects of such differences on IT acceptance and use (Barnett et al. 2015), pertaining to how and why users use and adopt new IT/IS through a model that is capable of doing so, namely the UTAUT model (Venkatesh et al. 2011; Venkatesh et al. 2003). Individual factors have been demonstrated to have a significant effect on cognitive IT interpretation, with several of them identified in past studies as relating to technology acceptance outcome (Alsyouf 2020; Agarwal and Prasad 1999). Two factors stand out in a consistent manner in relevant literature for evaluation and investigation: self-efficacy and TMS. Figure 1 presents the proposed research model.
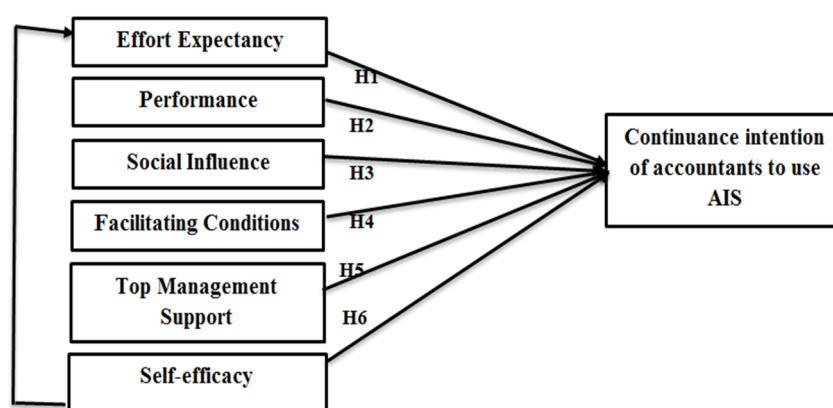

Figure 1. Model of the Current Study.

Factors Influencing the Continuous Adoption and Usage of IT/IS

Technology adoption among businesses, particularly accountants, has been examined in some studies, and their findings showed in-depth information concerning users' perception of satisfaction when using ISs (e.g., Alamin et al. 2015; Tam et al. 2020; Hofkirchner and Kreowski 2022). Additionally, Almaiah et al. (2022b) focused on the satisfaction differences among different professional groups using IS. Their findings revealed that the groups differed in their level of system use depending on the nature of their environment and work. Thus, in the current work, a theory-based approach is adopted to further explain and understand the continuance intention of accountants towards AIS usage.

The usefulness of the UTAUT model in examining the adoption of technology has been notable in literature, particularly in determining factors that influence intention to use and actual use of IT (Venkatesh et al. 2003, 2011). This is expected because the UTAUT is a combination of theoretical and experimental findings concerning user acceptance relationships in the field of IT, in different settings, including SME settings. However, Alsyouf and KuIshak (2018) highlighted the lack of studies examining additional constructs like TMS, despite the fact that TMS influences technology adoption success (Lutfi et al. 2022).

Studies such as Karahanna et al. (1999) used a combination of innovation diffusion and attitude theories in their attempt to investigate intention to use and continuance intention. They revealed that using a single belief set to explain specific stages of the innovation decision process may involve ambiguities, specifically among potential adopters, and that normative pressure is a determinant of intention to adopt, attitude is a determinant of user intention and pre-adoption attitude is a determinant of perceptive visibility, ease of use, usefulness, trialability and result demonstrability. The authors concluded that knowledge about attitudes, beliefs, and norms could change as time passes. Thus, on the basis of the above, this research considers continuance intention as a dependent factor rather than intention to use because of the study sample frame being Jordanian SMEs using AIS. It also examines intentions towards continuance of use of the system.

To begin with, EE is used to refer to the ease of using the system (Venkatesh et al. 2003); notably, EE is explained through three fundamental concepts, namely complexity, ease of use and perceived ease of use. Ease of use refers to the perception of an individual that the use of a system is free from mental and physical effort (Almaiah et al. 2022b; Moore and Benbasat 1991), and complexity is referred to as the perceptions of the users that using a technology cannot be understood easily (Cokins et al. 2020; Tam et al. 2020; Thompson et al. 1991). In connection to this study, EE is referred to as the perception of the ease of using AIS and the ease with which its use can be learned among the accountants, which ultimately means the ease with which the accountants can be skillful in using AIS. A review of literature indicates the significant effect of EE on continuance intention to use (Almaiah et al. 2021; Alsyouf et al. 2021; Venkatesh et al. 2011). Thus, in this study, the following is proposed:

Hypothesis 1 (H1). *Effort expectancy significantly and positively affects the continuance intention of accountants to use AIS.*

Moving on to PE, Venkatesh et al. (2003) referred to it as the way individuals perceive that using a specific technology will help in task performance effectiveness and efficiency. According to the authors, PE constitutes extrinsic motivation, job fit, perceived usefulness and outcome expectations. In relation to this, perceived usefulness was described by Davis et al. (1992) as the expectation of the individual that technology use will enhance the performance of work tasks. Davis (1989) related perceived usefulness with usage intentions. In the present study, PE refers to the accountants' perception that using AIS will enhance their efficiency and effectiveness in completing their work tasks in an expedient manner and enhance the provided service. Based on the reviewed literature, PE can affect continuance intention to use IT (Alamin et al. 2015; Almaiah et al. 2016; Tam et al. 2020; Venkatesh et al. 2011), and as such, this study proposes the following hypothesis for testing:

Hypothesis 2 (H2). *Performance expectancy significantly and positively affects the continuance intention of accountants to use AIS.*

The extent of the individual's perception that significant others believe that they should use a new system is referred to as SI (Venkatesh et al. 2003). The construct is comprised of image, subjective norms and social factors. Ajzen (1991) stated that subjective norms refer to the social pressure felt by individual in their inclination towards performing or not performing a specific behaviour (Alrawad et al. 2022; Bani-Khalid et al. 2022). In this study, SI is referred to as the perceptions of accountants of the way significant individuals

at work approve/disapprove of their acceptance and use of AIS. SI has been evidenced in literature to affect the continuance of intention to use (Alamin et al. 2015; Mulhem and Almaiah 2021; Tam et al. 2020). Thus, the current study proposes the following hypothesis:

Hypothesis 3 (H3). *Social influence significantly and positively affects the continuance intention of accountants to use AIS.*

With regards to FCs, Venkatesh et al. (2003) defined it as the level to which an individual trusts that the organisation has the required resources to support system usage. This construct is measured through its components of compatibility, perceived behavioural control and FCs; these have been labeled by Thompson et al. (1991) as objective factors, the presence of which supports easy task completion. Moreover, according to Thompson et al. (1991), training users and supporting them upon encountering difficulties in using the system is crucial. FCs is referred to in the current study as the perception of accountants that specific factors in the SMEs either prevent/promote the acceptance and use of AIS. FCs have been shown in literature to affect continuance intention to use (Alamin et al. 2015; Almaiah 2018; Tam et al. 2020), and as such, this study proposes the following:

Hypothesis 4 (H4). *Facilitating conditions significantly and positively affect the continuance intention of accountants to use AIS.*

Moving on to TMS, it refers to the level of support that higher management provides to adopt innovative technology in the business (Lutfi et al. 2017). TMS is among the three top critical predictors of IT innovation adoption at the organisational level (Jeyaraj et al. 2006). Technology adoption studies based on the TOE framework indicate that TMS significantly and positively affects the decision of the organisation towards innovative technology adoption (Lutfi et al. 2022). As a result, organisations with high support level from management when it comes to new innovation technology would have high likelihood to adopt social commerce. The top challenge noted in AIS use was found to be related to the nature of SMEs and the role they play in the complicated adoption process, including specific and advanced technical characteristics of the system and complex administrative role executions.

The importance of TMS in IS innovation implementation lies in its resource-intensive nature, and in this regard, material and managerial resources are needed for IS applications and infrastructure development as well as for supporting workers' usage (Yigitbasioglu 2015; Sharma and Yetton 2003). Additionally, the representational actions and support of managers contribute to implementation success, and these actions place legitimacy in IS innovations, indicate management commitment towards implementation success and convince end-users to extend their efforts towards innovation adoption (Lutfi et al. 2022). On the basis of the above, end-users need support and supervision during the system implementation stage, which contribute to successful implementation. It is crucial for managers to work closely with end-users in the stages of mandates, negotiation, motivation, persuasion and support for IS innovation adoption. Support from management also plays a key role in re-conceptualising work processes and tweaking daily routines and processes for implementation success (Purvis et al. 2001). With TMS significantly affecting intention to use the system, the following is thus proposed:

Hypothesis 5 (H5). *Top management support significantly and positively affects the continuance intention of accountants to use AIS.*

Finally, self-efficacy is the ability of the individual to complete a task through the use of technology (Venkatesh et al. 2003). Balkaya and Akkucuk (2021) and de Veer et al. (2015) advocated the positive influence of self-efficacy on the EE of the relevant technology. Another related study showed that self-efficacy significantly influences EE towards consumers'

adoption intention of the learning management system. Similarly, self-efficacy was proved by Upadhyay et al. (2022) to have a significant effect on EE. Thus, this study proposes the following:

Hypothesis 6 (H6). *The beliefs of accountants about the performance expectancy of AIS will be positively influenced by their self-efficacy.*

Figure 1 is an extended model of the UTAUT.

3. Methods

A quantitative approach was adopted to test the developed hypotheses and confirm the conceptual model's statistical representation of the variables. Accordingly, a questionnaire survey was developed as a primary data collection instrument to obtain information on respondents' attitudes towards PE, EE, FC, SI, TMS, SI and their relationships with continuance intention to use AIS (CIU-AIS) among Jordanian listed SMEs, keeping in mind that small enterprises are those employing 10–49 employees, while medium ones employ 50–249 full-time employees (Alshira'h and Abdul-Jabbar 2020). The unit of analysis consisted of accountants who were chosen based on their status as users and their high familiarity with AIS applications. Accountants generally have appropriate information and knowledge regarding the system.

Before the actual collection of data was conducted, the nature and purpose of the study were explained to the participants to obtain their participating consent. The authors informed them that their participation would remain voluntary and that they could stop participating at any time if they feel the need to do so; statements to this effect were contained in the instructions included in the questionnaire. The respondents were also informed that they would remain anonymous and that the researcher would refrain from taking down their personal information. The items in the questionnaire were developed in a way that is devoid of ambiguities so as not to confuse the respondents. Such safeguards were put into place to ensure adherence to ethical morals, given that the research was incriminating and sensitive in nature. The latent variables were gauged using items adopted from the past literature and measured using a five-point Likert scale ranging from 1, denoting strongly disagree, to 5, denoting strongly agree.

An extensive list of manufacturing SMEs was obtained from the Jordanian manufacturing sector of the Jordan Chamber of Industry (JCI). The list contained the entire names and details of the SMEs, numbering 17,749 enterprises. The JCI mandate states that any business in the country needs to be registered to obtain a work license. Based on the size of the population, the appropriate sample size was calculated to be 377 out of 17,748 firms (Krejcie and Morgan 1970). Still, the author distributed a higher number of questionnaire copies to ensure a high rate of response, as suggested by Al-Khasawneh et al. (2018), Alshira'h (2019), Alshira'h et al. (2020). This decision is based on the past literature that reported a response rate ranging from 20% to 40% to be suitable among Jordanian enterprises (Alshirah et al. 2021a; Alsyouf 2021). The study added to the number of distributed questionnaire copies by 75%, covering 660 SMEs under the distribution. The study adopted the probability sampling technique due to the related lower rate of bias and the generation of findings with higher generalisability (Al-Khasawneh et al. 2013; Al-Khasawneh and Barakat 2016; Zikmund et al. 2013). Random sampling method was used to select 660 respondents from the JCI list; with 27 (17,749/660) being the sampling interval, elements #27, #54, #81 and so on were selected up to the last sample. A total of 236 were retrieved from the distributed copies, from which 9 copies were dropped because of related issues, leading to a final total of 227 copies (34.4% rate of response).

4. Data Analysis

The study used partial least squares structural equation modeling (PLS-SEM) analysis, specifically Smart PLS3, to examine the developed hypotheses and analyse the proposed

research model. Basically, PLS-SEM is a statistical instrument that researchers use to analyse empirical data and test relationships simultaneously (Hair et al. 2019). It is appropriate to use for examining complex models with several items, variables and relationships (Chin 2010) and has the ability to examine small-sized samples unlike its counterparts (Hair et al. 2014). Moreover, PLS-SEM is not overly concerned with data normality (Sarstedt et al. 2014) and can be employed when other methods are unsuitable. Hair et al. (2019) described the analysis as being a two-stage procedure involving the measurement of the outer model in the first stage and the structural model in the second stage. The outer model is analysed in light of the reliability and validity of the constructs and indicators, while the inner model is evaluated to test the hypothesised relationships (their significance and direction).

5. Results and Interpretation

5.1. Common Method Bias

The research is susceptible to common method bias (CMB) because the survey is one that involves self-reporting (both independent and dependent variables were taken from the same respondents). Accordingly, the presence of bias was tested using Harman's single-factor test. This test was suggested by current studies to test for CMB (e.g., Patil et al. 2020; Sharma et al. 2021). The test results displayed the absence of CMB with the cumulated variance value being 35.076% (below 50%) (Fuller et al. 2016; Sharma et al. 2021).

5.2. Assessment of Measurement Model

This study ascertained the presence of the convergent and discriminant validities of the measurement model. Convergent validity describes the level to which the indicators of the variable present an accurate representation of the variable and correlate suitably with other variable measures (Hair et al. 2014). It is established by evaluating the loadings of the indicators using Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE). The values of Cronbach's alpha, CR and AVE in this study are presented in Table 1, and they are all over the values of 0.40 and 0.70 (Hair et al. 2019), thus confirming convergent validity.

Table 1. Relevant Indicators of the Measurement Model.

Latent Construct	Cronbach's Alpha	Composite Reliability	AVE
	>0.7	>0.7	>0.5
Continuance Intention to Use (CIU-AIS)	0.923	0.941	0.770
Effort expectancy (EE)	0.881	0.917	0.692
Performance expectancy (PE)	0.897	0.927	0.890
Social Influence (SI)	0.887	0.906	0.557
Facilitating condition (FC)	0.873	0.905	0.663
Top management Support (TMS)	0.876	0.904	0.531
Self-efficacy (SE)	0.904	0.933	0.776

After convergent validity is confirmed, the next examination is directed towards discriminant validity through the use of the Fornell-Larcker criterion (Hair et al. 2014), where the AVE square roots are compared to the correlation coefficient of the variables (refer to Table 2). Based on the results on the table, the AVE square roots are higher than the diagonal values lying in the respective rows and columns, indicating the presence of discriminant validity. Therefore, the measurement model succeeded in meeting the validity and reliability requirements at the indicator and variable levels.

Table 2. Correlations Among Latent Constructs (AVE Square Root).

	CIU-AIS	EE	FC	PE	SI	TMS	SE
CIU-AIS	0.875						
EE	0.706	**0.832**					
FC	0.511	0.557	**0.811**				
PE	0.762	0.637	0.479	**0.896**			
SI	0.533	0.544	0.515	0.545	**0.746**		
TMS	0.437	0.493	0.562	0.477	0.613	**0.733**	
SE	0.413	0.462	0.436	0.353	0.449	0.131	**0.842**

Note: The values in bold are the square root of AVE.

The PLS-SEM was used to conduct an evaluation of the measurement model in this study; for this purpose, the R2 value and the amount of variance that the exogenous variables interpreted were calculated. This value reflects the variance interpreted by the independent constructs of their dependent counterpart (Hair et al. 2019). The three constructs indicated an R2 value of 0.397, indicating that attitude, subjective norms and perceived behavioural control explained 39.7% of the intention towards continuance use of AIS.

5.3. Assessment of the Structural Model

The effect of the exogenous variables on the endogenous variable was tested by assessing the structural model, which involved four main criteria of evaluation, namely variance explained (R2), effect size (f2), predictive relevance (Q2) and path coefficient (β), and the results of the hypothesis testing (Chin 2010; Hair et al. 2019; Henseler et al. 2009). First, the significance of the path coefficient was tested through bootstrapping method using 5000 re-samples. From the results (refer to Table 3), EE had a significant and positive effect on the CIU-AIS among accountants (β = 0.335, t = 5.972, $p < 0.01$), indicating support for H1. FCs also had a significant and positive effect on the CIU-AIS among the SMEs' accountants (β = 0.104, t = 2.611, $p < 0.01$), which means H2 is also supported. PE was also found to have a positive and significant effect on the CIU-AIS of the accountants (β = 0.491, t = 10.012, $p < 0.01$), which supports H3. However, SI had an insignificant positive effect on the CIU-AIS in the SMEs (β = 0.069, t = 1.438), and as such, H4 was rejected. With regards to TMS, it had a negative and significant effect on the CIU-AIS of the SMEs' accountants, rejecting H5. Finally, self-efficacy had a significant effect on EE, and thus H6 is supported. On the whole, H1, H2, H3 and H6 are supported, whereas H4 and H5 are rejected.

Table 3. Result of Hypotheses Testing of the Direct Relationship Model.

Hypothesis No.	Path	*Beta*	T Statistic	Hypothesis Supported?
H1	EE →CIU-AIS	0.335	5.972 **	Yes
H2	PE →CIU-AIS	0.491	10.012 **	Yes
H3	SI →CIU-AIS	0.069	1.438	No
H4	FC →CIU-AIS	0.104	2.611 **	Yes
H5	TMS →CIU-AIS	−0.066	1.656 *	No
H6	SE →EE	0.212	3.031 **	Yes

Note: *t*-values > 1.645 * ($p < 0.05$); and *t*-values > 2.33 ** ($p < 0.01$) 1-tailed test. EE: effort expectancy, FC: facilitating condition, PE: performance expectancy, SI: social influence, TMS: top management support, SE: self-efficacy and CI: continuance intention.

5.4. Predictive Relevance of the Model

This study tested the predictive relevance of the model by using the Stone–Geisser test, which employs a blindfolding method (Geisser 1974). In particular, the blindfolding method was used to identify the predictive relevance of the model, following the recommendation of Sattler et al. (2010). According to the authors, the blindfolding procedure is applied solely to an endogenous latent variable that can be operationalised based on a

reflective measurement model. This is based on the notion that a latent construct generates a variation on observable items, and because the endogenous latent construct is reflective, a blindfolding method is used to analyse it while its predictive relevance is determined using a cross-validated redundancy measure (Q2), following the suggestions of prior studies (Chin 2010; Hair et al. 2019). Specifically, the cross-validated redundancy measure (Q2) presents the prediction of data of omitted cases by the model, with a Q2 value exceeding 0 indicating predictive relevance (Henseler et al. 2009). A higher positive Q2 value represents a higher predictive relevance. The cross-validated redundancy obtained for this study is displayed in Table 4.

Table 4. Construct cross-validated redundancy (Q2).

Endogenous Latent Variable	SSO	SSE	1-SSE/SSO
CIU-AIS	1483.000	1344.070	0.093

The Q2 value of the endogenous latent construct in this study was found to be higher than 0, and thus the predictive relevance of the model is confirmed (Chin 2010; Henseler et al. 2009).

6. Discussion

The primary objective of this study was to examine certain factors in light of their effects on the continuance intention of accountants towards using AIS in Jordanian SMEs. It is notable that the proposed model managed to explain 0.643 of the variance of CIU-AIS, implying that UTAUT examination in a new context is successful in meeting suggestions to examine factors that affect technology adoption in SMEs in the context of the workplace (Alamin et al. 2015). Only a few empirical studies have been conducted with the UTAUT as the underpinning theory in the context of SMEs (Venkatesh et al. 2011), with the majority of them in Western countries (Venkatesh and Zhang 2010).

Several dimensions make up the field of technology adoption and the context of SMEs (Jeyaraj et al. 2006), and thus the model included one endogenous factor (CIU-AIS) and two exogenous factors (TMS and self-efficacy). Based on the results, TMS and SI had a negative significant effect on the CIU-AIS, and thus two of the proposed study hypotheses were rejected in a finding that contradicted those reported by Lutfi et al. (2016), who contended that management support and commitment are top predictors of SMEs' adoption of AIS. This contradictory result may be attributed to the lack of training and support from top management provided to the accountants prior to AIS usage, which was reported to last only for two weeks. The accountants were also prevented from participating in decision making concerning the workflow as suggested in the system implementation. Thus, forming a staff as a conduit between the accountants and IT and documentation of the process through volunteers' creation of teams along with related activities was generally skipped (e.g., setting up teams to manage frontline contact with staff throughout the designing of the system, training, implementation and IT support process). The abovementioned steps would have boosted the engagement of the accountants with the system and would have supported its usage. Top managers in SMEs overlooked the above steps and ignored the key role of the involvement of accountants in decision making concerning workflow, program creation and system design that would assist in their efficient work, leading to their negative perceptions. Lastly, lack of incentives and compensation, which are common strategies employed to motivate employees, may have likewise led to the negative perceptions of the accountants concerning the role of TMS in the SMEs.

The results also revealed PE to be the top determinant of CIU-AIS among the accountants, which is consistent with past findings reported by Bhattacherjee and Premkumar (2004) and Venkatesh et al. (2011). The PE of accountants and their attitudinal perceptions change over time, particularly when it comes to using technology, and such changes are

more prominent in the first IT use phase rather than the later phases (Tam et al. 2020). In addition, the results showed that EE significantly and positively impacted CIU-AIS, which is aligned with Venkatesh et al.'s (2011) study. This result may be related to the accountants' face-to-face tasks, and thus spending time with IS may incur much time in computer-recording and documentation tasks (Alamin et al. 2015). In other words, it is pertinent to design an easy-to-use AIS for accountants, given that simple usage of the system will enable their familiarity with the system contents and functionality and that they will perceive it as useful in their tasks. The result implies that effortless usage of AIS influences the accountants' perception of it and its continuance of intention to use. User-friendly designed AIS interfaces and smooth network connectivity are top characteristics, and when accountants find it easy to use the system, they will intend to continue to use it.

The results did not show support for the significant effect of SI on CIU-AIS, which is in contrast with the findings of Venkatesh et al. (2011) and Bani-Khalid et al. (2022). This result may be attributed to the accountants' seeming inclination towards adopting formal networking types rather than informal to support matters related to AIS. Based on the results, following their AIS usage, the accountants formed their perceptions and convictions in light of productivity, ease of use and performance because post-adoption is not as influenced by the opinion of others when it comes to new system adoption. The efforts by the Jordanian government to facilitate IT/IS use, with the inclusion of accounting-related software provision through incentives/initiatives, aside from the reasonable costs for consultation from the agencies run by the government, can be the reason behind the lower dependence of accountants on the informal network. Few studies have reported findings that contrasted the significant effect of subjective norms on intention towards technology usage (e.g., Alalwan et al. 2017; Lutfi et al. 2017).

With regards to FC, its significant effect on CIU-AIS was supported in this study the same as in other studies, such as Alamin et al. (2015), implying that accountants are convinced that support and resources required from the firms are available to boost the use of AIS. This result may be attributed to the furnished training and resources that facilitated instant access to centralised information, specifically those provided by colleagues—such information influences workflow streamlining and promotes motivation towards system usage. Considering the presence of sufficient resources, accountants harbour positive attitudes for system usage engagement. The evaluation of such sufficient resources, which provide knowledge and assistance during system usage, led to positive perceptions of FCs and, ultimately, continuance intention. In addition, self-efficacy was revealed to have a significant effect on EE. Balkaya and Akkucuk (2021) revealed the significant influence of self-efficacy on EE and contended that self-efficacy assists teachers in using learning management system technology in the learning environment. In the same line of study, Upadhyay et al. (2022) supported the relationship between self-efficacy and EE and the former's role in motivating intention towards using mobile payment services. Aside from the above studies, Alamin et al. (2015) also reported the significant influence of self-efficacies on the behavioural intention of accountants to use AIS. The result suggested that AIS usage is highly driven by the competencies and proficiencies of an accountant to deal with and continue using the system. Explicitly, accountants with an advanced self-efficacy perception are more likely to have a greater intention to use the AIS than those with a lower self-efficacy perception. Thus, self-efficacy emerged as a critical factor that leads accountants to use AIS.

7. Contributions

The findings of this study can serve several implications for leaders and managers of SMEs, government entities, AIS consultants and vendors, and they are expected to contribute to technology usage in SMEs at the individual and organisation levels, which would eventually enhance the workings of SMEs (Buntin et al. 2011).

The result that indicated the negative effect of TMS on CIU-AIS in this study also has similar significant implications. To make sure that AIS is used by accountants and

management in SMEs, it is crucial for them to take part in technology implementation and planning. Lack of support from top management could mean a lack of motivation among accountants towards continuance use of AIS and a lag in its actual usage. Lack of management support can result in a lack of meeting staff needs and job tasks, which could mean a discontinuance of technology use as suggested by Davidson and Heslinga (2006) and Ludwick and Doucette (2009). Notably, managers in charge of IS innovation implementation face the major issue of strategy development for implementation effectiveness (Sharma and Yetton 2003). The behaviour of top management directly influences AIS use, and because actions reflect more meaning than words do, the study findings laid down a basic understanding for how efficient and effective interventions can be selected to match AIS usage needs, including bulletins where effective communication can be conducted.

More importantly, transformation and sharing of an established vision are generally influenced by the practical, active and relational behaviour of managers. Managers must be proactive in assisting, encouraging and addressing the concerns and queries from accountants to ensure an internalisation of vision. Based on the results, effective use will be realised if top managers are on top of things when it comes to obtaining users' feedback from middle-level management. Owing to the tendency of system usage to present predictable and unpredictable transformation within the organisation, it is crucial for top managers to modify their support level to align with the needed one rather than blindly providing training and technical assistance initiatives. Management should also allow accountants to participate in decision making when it comes to the workflow of program development; this would lead to user loyalty development and eventually boost IT usage among accountants, with higher engagement and continued system usage.

Top management should not presume that their support is understood by the accountants. Accordingly, it is important for them to clearly indicate their vision, positive perception and will power via tangible actions and interactions. Moreover, they should incentivise the accountants; incentives are what Jordanian SMEs lack, and the presence of incentives would likely improve the image of top management among the accountants.

The results suggested that management should leverage methods to cater to diverse users with different readiness levels; for example, users with a positive perception towards implementation would need resources such as IT support and training to be able to be adept at new technology usage in their tasks, while potential users who are not as inclined to adopt it would require support from management through their assistance, vision and explanation of the system advantages. Thus, in the context of accountants, top management should be aware of the issues and challenges faced from using the system so that assistance can be provided while promoting system advantages and slowly bringing about transformation. The accountants' collective awareness of the factors would lead to their continuance intention towards AIS usage.

Viewed from the viewpoint of policy makers, the findings can be used to minimise the gap between actual adoption and AIS implementation to create value for the establishments. The government can play a key role in assisting and creating awareness among SMEs when it comes to accessing AIS and its usage importance. Firms require encouragement to respond to the implementation; thus, a comprehensive campaign concerning AIS importance to SMEs should be prepared and carried out through training courses, publications, seminars and expert consultations. It is also crucial for governments to boost SMEs' AIS adoption to reap its several benefits, including enhanced quality, productivity and customer services, reduction of costs, optimum decision making and planning, enhanced empowerment and resource management. On the other hand, vendors and software developers need to develop rules with their formularies in a library so that accountants can refer to them time and again when faced with similar cases in their job tasks.

8. Limitations and Future Studies

In all research work, limitations are bound to be present and need consideration during the interpretation of findings. On the bright side, acknowledging such limitations

would pave the way for opportunities to be leveraged by future studies. In this study, focus was placed on Jordanian manufacturing SMEs, and as such, the findings can be directly generalised to SMEs and other countries' SMEs with similar characteristics. In this regard, the study can be replicated by including other sectors and enterprises to enhance the understanding of the adoption issue and generalisation of outcomes. The measurement scales, conceptualisations and generalisability of results may also be validated in future studies through this strategy. Another limitation is the limited dataset used in the study (227 responses) regardless of the numerous efforts of the author to conduct follow-ups. This number of responses was deemed sufficient to test the model fit and proceed with the statistical analysis, but future studies can validate the model by using large-sized samples to enable the use of covariance-based SEM and provide more accurate findings. Moreover, a larger-sized sample would shed more light into the relationships among the variables and validate the results.

Another limitation pertains to the use of cross-sectional data, leading to the failure to determine the actual and accurate associations among factors. In this regard, using longitudinal data may resolve this issue in future studies. Finally, the primary focus of this study was the continuance of AIS intention to use (post-adoption phase and usage phase) in an attempt to enhance the performance of SMEs. An enriching holistic outcome of the post-adoption diffusion and its effect on AIS may be provided through the inclusion of UTAUT factors to assess their impact on CIU-AIS at the level of the individual. Future studies may include UTAUT as the underpinning model to explain the relationship of the constructs using other technologies. The study result did not support the effect of TMS and SI on CIU-AIS, and thus, a further look into the relationships can be conducted in other technology types. Aligned with UTAUT, TMS can be tested in terms of predicting continuance intention in other organisational and sociodemographic characteristics to extend the model's validity.

9. Conclusions

The aim of this study is to extend the understanding on the adoption characteristics and perceptions of accountants of Jordanian SMEs after AIS implementation. SMEs in Jordan are faced with countless challenges relating to their operation and use of accurate information along with ineffective management. Following the implementation of the AIS, SMEs continue to face challenges of low adoption level. The adoption behaviour throughout different stages may be enhanced through effective managerial tactics to improve IS effectiveness and continuance of system usage.

In light of these issues and building on Venkatesh et al.'s (2011) UTAUT, this study investigated continuance of use of AIS among SMEs' accountants in Jordan, with TMS and self-efficacy tested as exogenous constructs. The study is expected to form the basis for more theory-based research in various settings. With the proliferation of the use of AIS, its use will notably affect the structure of communication and dissemination of the perceptions of users; as such, effective implementation of the system is a must for precipitated optimal SME outcomes and lowered incurred costs. Notably, the TMS result was unexpectedly in the negative, which may be attributed to the top management of SMEs in the Jordanian manufacturing sector needing to be proactive and more involved in the planning of the system implementation and its use for better adoption and continued use among accountants (Lutfi et al. 2017).

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