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Factors influencing SMEs' intention to adopt electronic tendering: empirical evidence from an emerging African market

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Abstract

Purpose – Despite the digitalization reforms attempting to enhance public service quality, paper-based tendering is still widely used in a number of developing countries (i.e. Morocco). This has led to many issues including waste of time, higher costs as well as labor-intensive issues. E-tendering has been widely recommended as a key resolution. Still, both scholars and practitioners raised concerns related the readiness of small and medium enterprises (SMEs) to this digitalization process. The current research aims to investigate the key drivers of SMEs intention to adopt electronic tendering in the context of an emerging African market (i.e. Morocco). Specifically, the authors focus on SMEs contributing to the public procurement process and registered in the online portal recently created by the Moroccan government.

Design/methodology/approach – To achieve this goal, the authors proposed a conceptual model combining the unified theory of acceptance and use of technology (UTAUT) and technology acceptance model (TAM). Based on data collected from suppliers participating in Moroccan public tenders, the authors empirically tested the conceptual model using a partial least squares (PLS) estimation.

Findings – Facilitating conditions and social influence had a positive impact on SMEs intention to adopt electronic tendering. The study's findings also convey a negative impact of effort expectancy on SMEs intent to adopt e-tendering. Unexpectedly, perceived performance had no significant impact on the intention to adopt electronic bidding among Moroccan SMEs.

Originality/value – This research filled the gap in the literature with regards to SMEs e-Tendering readiness in emerging markets. With the recent digitalization reforms of public tendering in many developing economies (i.e. Morocco), the study findings can be used to improve not only government implementation of electronic bidding but also SMEs' user experience.

Keywords E-tendering, Digitalization, Structural equation modeling, UTAUT, TAM, Emerging markets
Paper type Research paper

1. Introduction

Public procurement can be defined as the purchase of goods and services by public authorities. These purchases are accomplished through contracts that could be awarded to both national and foreign firms participating in tendering processes. It plays indeed a vital strategic part in supporting economic growth through investment projects financed or/and initiated by the government while realized by market officials (OECD, 2009). The manual planning and processing of tender documents is a major concern for governments in emerging economies as it can lead to several governance and efficiency problems

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(Chilipunde, 2013). The implementation of e-tendering has been widely discussed as a viable solution (Wimalasena and Gunatilake, 2018; Sánchez-Rodríguez *et al.*, 2020).

E-tendering refers to the application of information technologies and tools to circulate, store and make decisions on bids/tenders (Ibem and Laryea, 2016). The systems can be used to submit, receive, share and also come to a decision about tenders and bids proposals be it goods and services or construction works (Ibem and Laryea, 2016). Inappropriate tendering practices are seen as major contributors to companies' inefficiency (Adedokun *et al.*, 2013). Chilipunde (2013) convey that companies are increasingly encouraged to adopt electronic tendering or bidding in order to address several problems that could arise during manual process of generating and managing tender documents.

Government spending is one of the most significant challenges of the 21st century. In order to achieve cost saving and efficiency advantage in recent years, public authorities have been encouraging the introduction of information technologies and innovative communication tools during the last decades (Loudiyi *et al.*, 2022). e-Tendering was among the key measures adopted by public authorities in both developed and developing economies. Tendering is a process through which government companies get offers from interested contractors to carry specific tasks (Soong, 2020). While the traditional manual/physical tendering process is a time and resource consuming process, e-Tendering allows a smooth electronic exchange of information and limits the inaccuracies of the paper based tendering (Lebdaoui *et al.*, 2013). Despite the increasing interest in the use of E-business and E-commerce Internet Technologies (EEIT) among small and medium enterprises (SMEs) in the last decade (Adedukun *et al.*, 2013; Chilipunde, 2013; Soong, 2020), research investigating SMEs e-tendering adoption is still very restricted, particularly in developing countries.

In recent years, Morocco has taken important actions to respond to citizens' demand with regards to transparency, accountability and shared prosperity (Chetioui *et al.*, 2017a). These actions incorporated a multi-faceted set of reforms. New National e-Tendering/Bidding portal to simplify procedures and enhance access to procurement information was among the key incentives (Lipson *et al.*, 2014). Through successive government digital transformation strategies, the economy and society were identified among first priorities for setting up the country new development model as well as for strengthening the social contract between the state and citizens. To ensure the continuity of the dynamics created by the previous national strategy Digital Morocco 2013 (Maroc Numérique 2013) and to further boost the development of the digital economy sector, a new vision for digital transformation was developed in 2020 (Chetioui *et al.*, 2023). The national strategy "Maroc Digital 2020" aims to accelerate Morocco's digital transformation, reinforce the country position as a regional digital hub and take up the eco-systemic brakes by addressing the issues of governance and digitalization. The strategy also aims to empower Moroccan SMEs by giving them access to extra resources and market opportunities (Dataportal, 2020). The COVID-19 crisis also emphasized the urgency to shift to digital infrastructure, particularly in developing countries (Lebdaoui *et al.*, 2021a, b).

As part of its e-government strategy, the Moroccan government launched the Moroccan Public Procurement Portal (Portail Marocain des Marchés Publics: PMMP), a global project that aims to improve the efficiency of public procurement management and facilitate access for economic operators to business opportunities offered by public procurement. The project importance is mainly due to two national priorities: the development of electronic administration and the fight against corruption (Jiménez *et al.*, 2022). Recent government statistics report that bidding operations conducted through the online platform is still below the target outcomes of the Maroc digital strategy of 2020 (TGR, 2020). Though the number of registered suppliers on the portal raised from 9,500 in 2017 to 13.840 in 2019, Moroccan digitalization plan objectives are still not yet met (ADD, 2020). The readiness of SMEs to adopt e-tendering might have contributed to the unsatisfactory outcomes the Moroccan government digitalization strategy. Accordingly, investigating the drivers of Moroccan

SMEs intent to adopt e-tendering could be of added value to scholars, SMEs and policy makers.

The current research aims to investigate the key drivers of SMEs intention to adopt e-tendering through an integrated framework combining the TAM and UTAUT models. Focusing on e-tendering in SMEs is of significant importance in view of their major contributions to nowadays economies. In the Moroccan economy context, FEMISE (2019) statistics report that at least 95% of the companies are small or medium enterprises. Moroccan SMEs also produce about 40% of the Moroccan GDP and ensure 46% of total employment. The importance of e-tendering in SMEs resides in its potential to significantly boost the overall profitability of these enterprises (Soong, 2020). Concerning IT projects, and unlike larger companies, SMEs have lower IT expertise due to their fewer financial resources. Their employees should then be multi-skilled because of their multidisciplinary roles and a "production mode" focused on the expenses as their CEOs are more concerned by operational decisions (Andersson and Tell, 2009; Fink, 1998; Forsman, 2008; Huin, 2004; Thong, 1999; Utomo and Dodgson, 2001). In fact, the literature suggests that smaller firms differ from larger ones when it is about information system theories and practices, and what apply for the first category does not necessarily apply for the second one (Lee and Runge, 2001; Premkumar, 2003). Based on the above discussion, we believe it would be interesting to scrutinize readiness and intent to adopt e-tendering in the context of Moroccan SMEs.

The paper findings propose a number of practical implications. First, our research provides a deeper understanding of the key antecedents of SME intent to adopt e-bidding in the Moroccan context. This should help policy makers in encouraging SMEs readiness by offering constant mentoring and coaching to Moroccan SMEs. It will also help policy makers to better implement procurement reform programs and put in place efficient measures for a better implementation of e-tendering among SMEs. SMEs can also use the study findings to improve their readiness to e-tendering and take advantage of the benefits e-tendering may offer. The remaining of the paper is organized as follows: Section 2 presents the literature review. Methods and data are described in Section 3. Then Section 4 exposes and analyses the research results. Finally, the conclusions and implications are presented in Section 5.

2. Literature review

2.1 Theoretical foundation

With the increasing expansion of technology, the decision regarding acceptance or rejection of a new technology system remains an open question, especially information and communication technologies (ICT) that are becoming a part of users' private and professional life (Soong, 2020). The growing interest of scholars in investigating individuals and organizations willingness to adopt ICTs has yielded an advance in the literature resulting in novel conceptual frameworks. The technology acceptance model (TAM) was developed by Fred Davis in 1989 and became a dominant model in identifying factors affecting users' adoption of a new technology. The potential system usage is assessed through both external and internal variables. Psychological and sociological factors of adoption are emphasized in Venkatesh *et al.* (2003) Unified Theory of Acceptance and Use of Technology (UTAUT). In addition to identifying main individual-level aspects affecting the acceptance of a technology, UTAUT also underscores the potential factors that would strengthen or inhibit the impacts of these aspects. The UTAUT is believed to be a model could perform differently depending on cultural settings. This is due to the fact that some aspects' importance could vary across different cultural contexts. Our suggested conceptual models comprise numerous constructs to assess SMEs' intention and attitude toward e-Tendering/Bidding. Our study proposes and tests an integrated framework combining the UTAUT and TAM models.

2.1.1 Technology acceptance model (TAM). Based on Fishbein and Ajzen (1975) Theory of Reasoned Action (TRA), a theory mainly used in psychology research, Davis (1989) established the Technology Acceptance Model (TAM) in order to explain end-users' acceptance or adoption of different types of ICT systems and tools (Venkatesh and Davis, 2000).TRA stipulates that behaviors are generated or guided by intentions, which are in their turn affected by attitudes that are a consequence or a result of beliefs. According to TRA, individual's behavior depends on behavioral intention which is a result of one's attitude regarding behavior and subjective norms linked to the behavior's performance. TAM makes use of the interaction between intention, attitude and belief in an IT user acceptance model. Thus, TAM stipulates that individual's use depends on behavioral intention, and behavioral intention relies on the attitude toward using a technology (Chetioui *et al.*, 2023). Where attitude is in turn presumed to be dependent on perceived usefulness/benefit (PU) and perceived ease of use (PEOU). PU is referring to the extent to which the expected user believes using the system would affect his/her career development or his professional value inside his organization, while PEOU relates the effort expected in using a new system or more precisely the extent to which an individual foresees that using that system would require no additional effort. Although it is considered as one of the most influential models able of giving quite adequate prediction or explanation of user acceptance of technology/electronic systems (Pavlou, 2002), the TAM model's ability to explain the total variance is still relatively low (Davis *et al.*, 1989; Lebdaoui *et al.*, 2021).

2.1.2 Unified Theory of Acceptance and Use of Technology (UTAUT) model. The UTAUT was proposed by researchers after a process of synthesizing the propositions developed by many acceptance models such as TAM, TRA, Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Motivation Model (MM), Social Cognitive Theory (SCT), Model of PC Utilization (MPCU) and Innovation Diffusion theory (IDT). This process was initiated when researchers were confronted with a huge number of identical constructs coming from several information systems theories, and they had the obligation of choosing constructs from different models or picking a favorite model, ignoring thus the others (Venkatesh *et al.*, 2003). To explain individuals' acceptance and use of Information Systems or Technologies, a set of four different constructs are suggested by the basic Unified Theory of Acceptance and Use of Technology (UTAUT) model. Among these constructs, two may be considered as technology related attributes (Effort Expectancy and Performance Expectancy) while the remaining other constructs (Social Influence and Facilitating Conditions) are considered as organizational or contextual factors that influence individuals' behavior.

The conceptual framework adopted for this research was based on a combination of TAM and UTAUT models. Thus, we suggest the following framework:

2.2 Hypotheses development

As per Ajzen (2011), the intention to use e-tendering is a proxy of the strength of individual's intention to do a particular behavior. The actual use makes reference to an individual's actual or direct usage of a given technology/system (Lebdaoui and Chetioui, 2021). In this paper, "intention to use e-tendering" is seen as a key driver of e-tendering's actual level of use. This section presents the key factors leading to e-tendering use intention by using the TAM and UTAUT model.

2.2.1 Effort expectancy. Effort expectancy (EE) stands for the extent of easiness expected from e-tendering use. This item is related to the perceived level of effort needed by the individual adopter in order to master and run the system. The EE factor has been taken from the UTAUT model which has been analyzed through several studies (Wang, 2003; Fu *et al.*, 2004; Hung *et al.*, 2006). This variable is adapted from the UTAUT model and stands for the individual's perception of how easy is using an electronic procurement system (Driouchi *et al.*, 2011). Mohamed Saeed *et al.* (2020) convey that EE positively impact the behavioral intention of suppliers to use E-tendering. In a similar context, Soong *et al.* (2020) demonstrated that the easier the use of e-procurement systems, the more likely Malaysian SEMs were willing to adopt. This also goes in line with the findings of Zulkifli *et al.* (2015) for the same country. This research uses EE as a determinant of intention to use e-tendering. It hypothesizes EE as a barrier for the user of e-tendering system. Then our study posits the below hypothesis:

H1. Effort Expectancy positively impacts SMEs intention to adopt e-tendering

2.2.2 Performance expectancy. In the context our research, Performance expectancy (PE) is defined as to the extent to which an individual believes that e-tendering will contribute to improve their job performance (Davis, 1989; Hung *et al.*, 2006; Venkatesh *et al.*, 2003). Several studies in the past have demonstrated that benefit/usefulness/benefit as perceived by users is one of the main intention predictors to adopt a new system or technology whether in mandatory or voluntary settings (Venkatesh *et al.*, 2003). Rogers (2003) postulates that the degree of interest is often depending on factors such as social status development and economic profitability which are important to the users. In our case, PE stands for the extent to which adopting e-tendering will support users in improving their career development (Venkatesh *et al.*, 2003). Shatta and Shayo (2021) suggest a positive influence of PE on adopting an E-bidding system. This aligns with the findings of many other recent studies (Addy *et al.*, 2022; Mohamed Saeed *et al.*, 2020; Zulkifli *et al.*, 2015; Shatta *et al.*, 2020). Thus, we investigate the following hypothesis:

H2. Performance Expectancy positively impacts SMEs intention to adopt e-tendering

2.2.3 Facilitating conditions. Facilitating conditions (FC) is another key determinant of the intention to adopt a new system/technology (Ammenwerth, 2019). Adopted from the UTAUT model (Venkatesh *et al.*, 2003), Facilitating conditions construct (FC) is intended to remove the barriers to use a new information system. FC refers to the degree to which a user believes that enough technical infrastructures and support exist to facilitate the use of a new information system (Venkatesh *et al.*, 2003). This relates to the technical aspect in an organizational context where individuals or users of a new information system should be helped and assisted in order to remove technical barriers and making the adoption easier and free of effort. More concretely, it is a kind of guarantee of assistance to individuals in matter of necessary software and hardware infrastructure to be able to run the new information system without forgetting the system compatibility with the other systems. In the context of e-procurement, prior literature demonstrated that FC significantly impacts SMEs intention to adopt E-bidding (Soong *et al.*, 2020). Addy *et al.* (2022) suggest no significant impact of FC on the adoption of e-procurement services in construction projects. Based on the above, we presume that when facilitating condition are in place, SMEs are more likely to intend to adopt e-tendering. Accordingly:

H3. Facilitating conditions positively impact SMEs intention to adopt e-tendering

2.2.4 Social influences. Social Influence (SI) refers to the extent to which people perceive how relevant others (managers, colleagues, subordinates, competitors, etc.) think that they should use a new technology or system. Social influences variable has been adopted in the UTAUT model (Venkatesh *et al.*, 2003) and PC utilization model (Batara, 2017; Hung *et al.*, 2006). In many companies, there is high level of resistance to change with the introduction of a new technology or system especially in developing countries (Lebdaoui, 2021), hence some initiation or first steps are needed by some employees to form the basis group and then encourage and motivate other stockholders and employees (Dwivedi *et al.*, 2017). Several studies confirmed that Social influences item is a crucial factor that significantly impacts the using a new system or technology (Dwivedi *et al.*, 2017; Gasco *et al.*, 2018; Razak *et al.*, 2017). Most of the studies established that social influences is a main factor in predicting the utilization of a new system explaining that peer pressure on employees is considerably affecting their perception or attitude toward using a new system. Addy *et al.* (2022) emphasized SI as a key predictor of the adoption of E-bidding in the construction industry. In that same context, Mohamed Saeed *et al.* (2020) convey that SI positively influences the adoption of e-procurement services. Based on all above, we posit the following hypothesis:

H4. Social influence positively impacts SMEs intention to adopt e-tendering

3. Methods

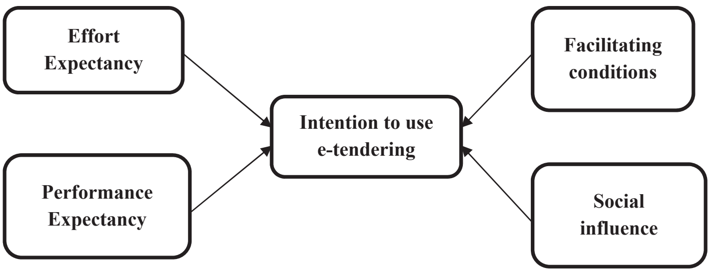
3.1 Measures

All constructs were adapted from the literature. To test the aforementioned hypotheses of the proposed conceptual Model and framework (Figure 1), a 30 questions long electronic questionnaire was conceived and administered. Each variable was assessed through different items from the literature. Each item was measured using five-point range scale from “strongly disagree” “1” to “strongly agree” “5” (Lebdaoui *et al.*, 2022). The survey included a demographic section through 5 questions related to gender, age, job, company sector and company turnover. We also modified the language of the constructs from English to French for a better and more suitable understanding from the respondents in order to collect more accurate information/data (Chetioui and Lebdaoui, 2022).

3.2 Data

Data was collected between October and November 2021. The sampling frame of this research comprises Moroccan suppliers participating in the public procurement process of ONEE, companies members of Fédération Nationale de l’Electricité, de l’Electronique et des Energies Renouvelables (FENELEC), companies members of Confederation du Groupement des Entreprises du Maroc (CGEM) and Moroccan companies belonging to construction and building industry with others. Over 2000 questionnaires were sent and were administrated by email and follow-up e-mail notifications were needed before reaching out the threshold number of surveys.

Of more than 2,100 total surveys mailed, about 600 were undelivered due to bad addresses and this supposes that at least, 1,500 were presumed to have been delivered. Of these, 155 answers were received out of which 138 were found complete and have been used for analysis. We decided to only work with SEMs and finally ended up with a sample of 138 answers, that was adequate for our survey that is built of 30 measurement items. In fact, and as we are using structural equation modeling (SEM) to test our conceptual framework, partial least square SEM (PLS-SEM) seems to be adapted to small sample sizes even for highly complex models



Source(s): Authors

Figure 1.
Conceptual model

and it can achieve improved convergence behavior than other (Lebdaoui *et al.*, 2021a, b). Our sample respondents' profile are illustrated in Table 1.

4. Results

To assess our conceptual model and the casual relationships between constructs, we used Structural Equation Modeling (SEM). The choice is based on the fact that SEM is gaining a growing interest as one of the most used econometrical tools for testing cause-effect-relationships models (Hair *et al.*, 2014). The selection of SEM-PLS is also motivated by the novelty of the proposed conceptual model and the complexity of the study hypothesized relationships (Lebdaoui and Chetioui, 2020).

4.1 Assessment of the measurement model

Results were analyzed in two steps. We started by testing the reliability and validity of the measurement model as a first step; then PLS-SEM was used for testing the hypotheses as second step. All our analysis has been conducted based on Smart PLS 3.0 software (Ringle *et al.*, 2005). Examining the measurement model will entail assessing discriminant validity, convergent validity, construct reliability and indicator's reliability. First, we checked the indicator reliability. As illustrated in Table 2, the standardized factor loading of all items are in the range of 0.725–0.924. These values are better than the recommended value of more than 0.7 (Henseler *et al.*, 2009, Lebdaoui *et al.*, 2022). Hence, we can affirm achievement of the indicator reliability.

Second, we examined the construct reliability using the two criteria of Cronbach's alpha (CA) and composite reliability (CR). Constructs CA values are in the range of 0.780–0.919 and CR values are in the range of 0.874–0.940 as we can see in Table 2. So both CR and CA are above the threshold of 0.7, confirming the construct reliability (Hensler *et al.*, 2009).

Third, we checked the convergent validity. As we can see in Table 3, the calculated values of average variance extracted (AVE) for constructs are oscillating between 0.594 to 0.757, which is higher than the threshold of 0.5. In fact, studies stipulate that the AVE should be at least equal to 0.5 to be accepted as sufficient and predict more than 50% of the variance of its indicators (Hair *et al.*, 2010; Henseler *et al.*, 2009). As a conclusion, we can confirm that convergent validity is achieved (Lebdaoui, 2021).

Finally, we checked the discriminant validity using three criteria. The first criterion is the Fornell–Larcker criterion, which indicates that the root square of AVE for each latent variable should be greater than the correlation with any other variable (Fornell and Larcker, 1981). In Table 3, we can conclude that this condition is accomplished. The second criterion is related to the indicators' cross-loadings. Chin (1998) suggests that the loading of every indicator should be greater than all of its cross-loadings in order to be considered valid. Our results show that all the aforementioned criteria were checked, and the values of all constructs have loadings greater than their cross-loadings's values (Hair *et al.*, 2010).

Measure	Item	*N*	(%)	Measure	Item	*N*	(%)
Gender	Male	100	72.46%	Sector	Services	56	40.58%
	Female	38	27.54%		Construction	37	26.81%
Age	below 30 years old	17	12.32%		Manufacturing	8	5.80%
	30–39 years old	40	28.99%		Other sectors	37	26.81%
	40–49 years old	37	26.81%				
	above 50 years old	44	31.88%				
Position	Top Management	21	15.22%	Revenues	Below 10 MDH per year	90	65.22%
	Managers	27	19.46%		10–30 MDH per year	34	24.64%
	Assistant	90	65.22%		30–75 MDH per year	14	10.14%

Source(s): Authors

Table 1. Survey respondent profile (n = 138)

Constructs	Items	Loading	CA	CR	AVE
Effort Expectancy	EFF1	0.803	0.919	0.940	0.757
	EFF2	0.894			
	EFF3	0.902			
	EFF4	0.837			
	EFF5	0.910			
Facilitating conditions	FAC1	0.727	0.834	0.878	0.594
	FAC2	0.761			
	FAC3	0.799			
	FAC4	0.886			
	FAC5	0.846			
Intention to use e-procurement	INT1	0.879	0.780	0.874	0.699
	INT2	0.894			
	INT3	0.725			
Performance Expectancy	PER1	0.828	0.867	0.904	0.654
	PER2	0.843			
	PER3	0.849			
	PER4	0.765			
	PER5	0.753			
Social Influences	SOC1	0.887	0.918	0.939	0.755
	SOC2	0.924			
	SOC3	0.882			
	SOC4	0.842			
	SOC5	0.804			

Note(s): CA—Cronbach Alfa; CR—Composite reliability; AVE—Average Variance Extracted
Source(s): Authors

Table 2. Factor loading, composite reliabilities, and average variance extracted (n = 138)

Effort expectancy	*0.870*				
Facilitating conditions	0.520	*0.771*			
Intention to use e-procurement	0.494	0.914	*0.836*		
Performance Expectancy	0.575	0.672	0.673	*0.809*	
Social Influences	0.555	0.621	0.766	0.608	*0.869*

Note(s): Discriminant Validity
Source(s): Authors

Table 3. AVE and correlations

The third criterion is about the Hetrotrait–Monotrait ratio (HTMT). This ratio threshold is 0.9 (Hensler *et al.*, 2015). All values are lower than the threshold of 0.9 as illustrated in Table 4. As a conclusion, we can confirm that discriminant validity is achieved.

4.2 Assessment of the structural model

The assessment of the indicator reliability, construct reliability, convergent validity and discriminant validity produce satisfactory results allowing us to proceed with test of the structural model. To assess the structural model, we start by the crucial criterion which is the coefficient of determination (R^2) of the endogenous latent variables (Tenenhaus *et al.*, 2005). Chin (1998) conveys that if R^2 value is higher than 0.67, it is considered high. When this value is between 0.33 to 0.67, it is considered moderate but when R^2 value is ranging from 0.19 to 0.33, it is considered weak. R^2 values under 0.19 are unacceptable. R^2 in our case is equal to 0.704 which is accordingly considered as high.

As illustrated in Table 5, all the hypotheses except one were confirmed and explain 70.4% of the variation in respondents' intention to use e-tendering. Hypothesis H1 is supported,

Table 4. Heterotrait-monotrait ratio (HTMT)

	Effort Expectancy	Facilitating conditions	Intention to use e-procurement	Performance expectancy	Social Influences
Effort Expectancy					
Facilitating conditions	*0.627*				
Intention to use e-procurement	*0.585*	*0.756*			
Performance Expectancy	*0.637*	*0.777*	*0.816*		
Social Influences	*0.609*	*0.702*	*0.824*	*0.679*	

Source(s): Authors

Table 5. Path Coefficients of the research hypotheses

Hypo	Relationship	Std. Beta	Std. Error	T-value	*P*-value	Decision
H1	Effort Expectancy → Intention to use e-procurement	−0.094	0.035	2.672	*0.008*	*Supported*
H2	Facilitating conditions → Intention to use e-procurement	0.729	0.049	14.907	*0.000*	*Supported*
H3	Performance Expectancy → Intention to use e-procurement	0.024	0.047	0.519	*0.604*	*Not supported*
H4	Social Influences → Intention to use e-procurement	0.351	0.047	7.459	*0.000*	*Supported*

Source(s): Authors

i.e. Effort expectancy has a negative impact on the intention to use e-tendering ($\beta = -0.094$; $p = 0.008$). Facilitating conditions presents the most important positive effect on intention to use e-tendering ($\beta = 0.729$; $p = 0.000$) supporting H2. However, Performance expectancy is not affecting intention to adopt e-tendering ($\beta = 0.024$; $p = 0.604$), not supporting H3. Regarding Social influences, it has a significant effect on the intention to adopt e-tendering ($\beta = 0.351$; $p = 0.000$) supporting H4.

5. Discussion and conclusion

The present study attempted to investigate the antecedents of the intention to use e-tendering among Moroccan SMEs. Based on data collected from a sample of 138 managers from SMEs in various industries, we assessed the causal relationships of our measurement model using structural equation modeling. Our findings convey a number of theoretical and practical implications.

5.1 Theoretical implications

This research attempts to assess the main drivers of the intention to use e-tendering among a sample of Moroccan SMEs by incorporating variables borrowed from the UTAUT and TAM models, namely, facilitating conditions, social influence, effort expectancy and performance expectancy.

Our findings revealed that the most important factor affecting SMEs intention to adopt e-tendering is Facilitating Conditions. In line with previous findings (Addy *et al.*, 2022; Soong *et al.*, 2020; Venkatesh *et al.*, 2003), good infrastructure, reliable helpdesk and facility to use e-Tendering Portal play critical role to encourage e-tendering adoption. The next most influential factor affecting SMEs intention to adopt e-tendering is Social Influence. SMEs are highly influenced by their counterparts and competitors when it comes to e-tendering adoption. This finding is in line with previous research (Gasco *et al.*, 2018; Mohamed Saeed *et al.*, 2020; Razak *et al.*, 2017; Soong *et al.* 2020). Not as expected, Effort Expectancy had a negative impact on the intention to adopt e-tendering among SMEs. This is not consistent with previous findings (Razak *et al.*, 2017; Soong *et al.*, 2020; Venkatesh *et al.*, 2003). The expected amount of energy needed to be invested by the user in order to master and run the e-tendering Portal plays a critical role in adopting e-tendering. Surprisingly, our analysis failed to prove the impact of performance expectancy on intention to use e-tendering among SMEs. This goes in contradictions with previous research (Soong *et al.*, 2020; Venkatesh *et al.*, 2003; Addy *et al.*, 2022; Mohamed Saeed *et al.*, 2020; Zulkifli *et al.*, 2015). A possible explanation could be related to resistance to change underlining the attitude of many users who might resist to a new system because they do not believe their performance would be improved in addition to the difficulty accompanying the usage of such system. Data warehousing would also be a concern, since most of companies would fear electronic systems integrity (Lebdaoui *et al.*, 2017).

5.2 Practical implications

Overall, our suggested model seems to be supported by the data analysis, showing the importance of Facilitating Conditions, Social Influences and Effort Expectancy as key influencing factors of the Intention to adopt e-tendering among SMEs. Several practical implications can be drawn from the results of our research as it gives a better understanding of the factors on which policy makers as well as top managers should concentrate to enhance e-tendering adoption rate among Moroccan companies. First, facilitating Conditions are key to the intention to adopt e-tendering by Moroccan SMEs. This implies that to adopt a new technology in general and e-tendering in particular, technical and infrastructure barriers should be lowered. On the other hand, some material individual internal barriers should be also addressed by giving free training sessions and workshops designed for employees. This will give a clear idea about the functioning and added value of e-tendering and promote high usage of it among Moroccan SMEs. Second, and regarding the Social Influence factor, the pressure experienced from employees and from competitors is providing a push for companies to deploy their existing capabilities. In fact, to face competitiveness, SMEs should expand the use of ICT to maintain their market share and not lose customers (Lebdaoui *et al.*, 2014). On the individual side, employees are affected by their colleagues and competitors' behavior toward ICT, and this motivates them to adopt e-tendering. Policy makers could use social factor to promote e-tendering adoption. Third, employees give a critical importance to Effort Expectancy factor. This implies that moving from old adopted processes to new ones would surely bring some important challenges. When shifting from manual to electronic process, one of the most famous challenges in many organizations lays in is resistance to change. But this could be solved once employees understand the advantages and added value of the e-Tendering portal. And the result would be enhanced by trying to make the system free of effort and easy to use. Finally, respondents from our survey do not see enough perceived advantage or usefulness in adopting e-tendering. This could be explained in our context by a low adoption of e-tendering which means that the SMEs from our sample did not yet reach a maturity in the subject.

6. Limitations and future research

The main limitation of this study is that the surveyed population of SMEs is limited to some Moroccan SMEs with a majority belonging to bidders from ONEE suppliers' database. Regarding the survey participants, the degree of representativeness of all country's small and medium business has not been established because of difficulty of access to information and poor digitalization. However, the research is choosing this area for some important reasons. First, there is not enough literature about e-tendering in Morocco. Second, the importance of e-Government in Morocco is making central government promoting the use of ICT in the public sector in order to enhance citizens' wellbeing and good governance (Chetioui *et al.*, 2017b). Third, e-tendering is taking time to be adopted as the law was adopted in 2007 with the generalization of e-tendering to all activities in 2017, yet we are still having more than 90% of physical bids rather than electronic ones at the national utility or electricity and water as example knowing that ONEE is the 3rd investor in in the country. Moreover, as this research is focusing on assessing the intention to use e-tendering, future research could be dealing with measuring organizations' maturity in e-tendering. It could also include companies from North African countries or MENA region.

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