

An analysis of business' acceptance of internet banking: an integration of e-trust to the TAM

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Abstract

Purpose – The purpose of this research is to provide insights into the determinants of businesses' internet banking acceptance. It attempts to address a research need for extending the technology acceptance model (TAM) by adding contextual variables. As trust has never failed to be a significant predictor in e-commerce research, this study proposes to integrate trust into the TAM to get a better understanding of business e-banking adoption.

Design/methodology/approach – A research model reflecting the effect of e-trust dimensions on TAM constructs is proposed. Based on relevant literature, a questionnaire was designed and administered to 102 business managers through a Web survey. A structural modelling analysis was applied.

Findings – The results confirm the dimensions and relations of the TAM. Moreover, two main trust dimensions – integrity and credibility – positively influence perceived usefulness and exert both a direct and an indirect positive effect on attitude towards business' internet banking adoption and behavioural intention.

Practical implications – The managerial implications of the study are that Tunisian banks should consider influencing internet banking behaviour not only by developing ease of use and usefulness beliefs, but also by promoting professional credibility and integrity. They should, also, try to attract business users by focusing on and communicating the integrity and the credibility of the bank and highlight the ways in which these concerns have been ensured.

Originality/value – This study supplies the valuable integration of trust to the TAM. It reveals that extended TAM could be used to provide a solid theoretical foundation of business' acceptance of internet banking. In this study, trust construct is measured through a multidimensional scale including four dimensions (benevolence, credibility, integrity and orientation to resolve problems). Moreover, this study focused on an emergent country, Tunisia, whereas most studies in the literature concentrate on research cases of developed countries.

Keywords Trust, Business, Internet banking, TAM

Paper type Research paper

Introduction

The development of internet usage and the huge funding initiatives in electronic banking have drawn the attention of researchers towards internet banking adoption. In the past, the conventional focus of internet banking research has been on technological development, but now, this is shifting to user-focused research. Although important amounts have been spent on building internet banking systems, reports show that potential users may not use them, despite their availability (Reid and Levy, 2008; Wang *et al.*, 2003). An understanding of aspects that induce people to use the internet for banking purposes is always a matter of concern for the performance of financial services in terms of return on investments (Barbole *et al.*, 2013; Agarwal *et al.*, 2009; Gerrard and Cunningham, 2003; Sathye, 1999).

As user acceptance remains the main barrier to the success and the development of banking self-service technologies (Alsajjan and Dennis, 2010), many studies have examined the consumers' resistant factors for adopting internet banking (Ezzi, 2014; Candra, 2013; Maduku, 2013; Agarwal *et al.*, 2009; Sayar and Wolfe, 2007; Eriksson *et al.*, 2005; Jaruwachirathanakul and Fink, 2005; Gerrard and Cunningham, 2003). Among these, relatively few studies have been conducted in the business context. Therefore, it would be interesting to identify specific factors that determine acceptance of internet banking by business users.

There is a growing body of academic research being focused on examining the determinants of computer technology acceptance and use. Among the different models that have been proposed, the technology acceptance model (TAM) (Davis, 1989) appears to be the most widely accepted among information systems researchers. According to the TAM, adoption behaviour is determined by the intention to use a particular system, which in turn is determined by the perceived usefulness and the perceived ease of use of the system. Although information systems researchers have

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investigated and replicated the TAM, and agreed to its validity in predicting the individual's acceptance of various corporate information technologies, the TAM's fundamental constructs do not fully reflect the specific influences of technological and usage-context factors that may alter user acceptance (Ezzi, 2014; Candra, 2013; Maduku, 2013; Agarwal *et al.*, 2009; Reid and Levy, 2008; Ozdemir *et al.*, 2008; Chen and Barnes, 2007; Guriting and Ndubisi, 2006; McKechnie *et al.*, 2006; Laforet and Li, 2005; Eriksson *et al.*, 2005; Pikkarainen *et al.*, 2004; Wang *et al.*, 2003; Howcroft *et al.*, 2002). As Davis (1989) noted, we have a need for future technology acceptance research to address how other variables affect usefulness, ease of use, attitude and user acceptance. However, factors affecting the acceptance of a new information technology are likely to vary with the nature of the technology, target users and context (Wang *et al.*, 2003). Agarwal *et al.* (2009) noted that there is a pressing need to validate integrated technology acceptance models that include universal variables, such as trust, across cultures. Ezzi (2014) as well as Candra (2013) and Reid and Levy (2008) highlighted the complexity nature of trust and the necessity to explore this concept more to get a better understanding of e-banking adoption.

Given the open nature of the internet and the lack of sufficient regulations concerning e-commerce activities, the importance of trust and trust-related concepts such as transaction security and risk is likely to emerge as the biggest concern among the actual and potential e-banking users (Alalwan *et al.*, 2015; Ezzi, 2014; Candra, 2013; Maduku, 2013; Al-smadi, 2012; Nasri, 2011; Agarwal *et al.*, 2009; Ozdemir *et al.*, 2008; Suh and Han, 2002). Trust was shown to have a striking influence on user willingness to engage in online exchanges of money (Reid and Levy, 2008; Wang *et al.*, 2003). Trust is not merely a short-term issue, but also the most significant long-term barrier for realizing the potentials of e-commerce (Gefen, 2000).

As trust has never failed to be a significant predictor in e-commerce research, Agarwal *et al.* (2009) propose to include trust in behavioural models to better explain internet banking adoption. Few studies have investigated business e-trust in banking context and its impact on internet banking adoption, and even fewer focused on emergent countries (Alalwan *et al.*, 2015; Ezzi, 2014; Al-smadi, 2012). This research aims to address this knowledge gap by identifying significant specific variables that affect the adoption of electronic banking services by business users in Tunisia. Identifying such variables will improve the likelihood of increasing the adoption rate of these services, by deepening the knowledge about the variables which facilitate or hinder business adoption process. For this purpose, this study develops and examines a theoretical model integrating e-trust to the TAM to provide a more comprehensive model of business' internet banking adoption. This study differs from the previous literature in two significant ways. First, this study aims to show how e-trust dimensions affect adopting business internet banking services. Second, this study does not focus on consumers' internet banking adoption, but on business' internet banking adoption.

The study is structured in five sections. In the first section, we develop the theoretical background of the study. The

second section presents the research design and method. The third section comprises the data analysis and hypotheses testing results. The fourth section discusses the main findings and draws implications for bank managers. In the fifth and final section, we present conclusions and suggest future research directions.

Theoretical background

Technology acceptance model

The theoretical background for this research derives from the TAM. Proposed by Davis, (1989) to explain and predict end-user acceptance of information systems, the TAM has been validated across a broad range of research settings on different information technology applications over time. The TAM is an extension of the theory of reasoned action (TRA), developed by Fishbein and Ajzen (1975) to describe the psychological determinants of behaviour. The TRA is based on the attitude-behaviour paradigm from cognitive psychology. According to the TRA, an individual's performance of a specific behaviour is determined by his or her behavioural intentions, which are a function of individual attitudes (the person's feelings that performing the behaviour is good or bad) and subjective norms (the person's beliefs that certain individuals or groups approve or disapprove of performing the behaviour) (Fishbein and Ajzen, 1975).

Based on the TRA, the TAM assumes that two personal beliefs about usefulness and ease of use of the technology influence attitude, which in turn leads to behavioural intention and then generates behaviour to use the system (Venkatesh and Davis, 1996; Davis *et al.*, 1992). Perceived usefulness is defined as the degree to which individuals believe that using a particular system would enhance their job performance (Davis, 1989). Perceived ease of use relates to the degree to which individuals believe that using a particular system would require no particular effort (Davis, 1989). Perceived ease of use affects attitude either directly and indirectly through its effect on perceived usefulness:

[...] even if potential users believe that a given application is useful, they may at the same time believe that the systems are too hard to use and that performance benefits of usage are outweighed by the effort of using the application (Davis, 1989).

Davis (1989) argues that people adopt an application primarily because of the functions it performs and secondarily because of the ease or difficulty associated with making the system perform these functions. A significant body of research provides empirical support to show that perceived usefulness and perceived ease of use play a critical role in predicting and determining the adoption and the use of new information technology, including the adoption of internet banking (Alalwan *et al.*, 2015; Ezzi, 2014; Charfeddine and Nasri, 2013; Nasri, 2011; Norazah and Norbayah, 2009; Norazah *et al.*, 2008; Venkatesh *et al.*, 2003; Moon and Kim, 2001; Venkatesh and Davis, 2000; Lin and Liu, 2000; Karahanna *et al.*, 1999; Teo *et al.*, 1999; Igbaria *et al.*, 1996; Adams *et al.*, 1992).

Within the TAM, perceived usefulness is the major factor having a direct effect on behavioural intention, determining a large proportion of attitude and mediating the effects of perceived ease of use on behavioural intention (Chen and Barnes, 2007; Guriting and Ndubisi, 2006;

Jaruwachirathanakul and Fink, 2005; Eriksson *et al.*, 2005; Fusilier and Durlabhji, 2005; Gefen *et al.*, 2003; Lin and Lu, 2000; Venkatesh and Davis, 2000; Venkatesh, 2000; Hu *et al.*, 1999; Venkatesh and Davis, 1996; Davis, 1989; Davis *et al.*, 1989). Recent information system acceptance studies reveal that the influence of perceived ease of use on attitude and intentions remains speculative and suggest that perceived ease of use operates mainly through perceived usefulness (Ezzi, 2014; Ha and Stoel, 2008; Gefen and Straub, 2000).

The TAM assumes that behaviour – “the manifest, observable response in a given situation” (Ajzen, 2006) – is volitional. Behavioural intention indicates a person’s readiness to perform the given behaviour (Ajzen, 2006), which makes it the main predictor of the actual behaviour. In the TAM, intention is a function of attitude and perceived usefulness. Attitude is “the degree of evaluative affect that an individual associates with using the target system” (Davis, 1993). Also, it reflects people’s predisposition to respond either favourably or unfavourably to a particular behaviour (Triandis, 1979). The TAM suggests that attitude is based on the salient beliefs (perceived usefulness and perceived ease of use), which a person has about the consequences of a given behaviour and his or her evaluation of those consequences. More specifically, Polatoglu and Ekin (2001) suggested that customer attitude is composed of one’s beliefs about the object and perceived importance (weight) of that attribute in making the decision to adopt.

Some studies consider the link between attitude and behavioural intention proposed in the TAM as problematical, because of partial mediation of attitude in the relationship between beliefs and intentions, whereas it is assumed that beliefs are better predictors of intentions (Alsajjan and Dennis, 2010; Venkatesh *et al.*, 2003). However, an extensive body of literature on the adaptation of electronic commerce forms, including internet banking, reports the significant relationship between attitude and behavioural intention (Hausman and Siekpe, 2008; Celik, 2008; Hernandez and Mazzon, 2007; Cheng *et al.*, 2006; Cao and Mokhtarian, 2005; Eriksson *et al.*, 2005; Jaruwachirathanakul and Fink, 2005; Shih, 2004; O’Cass and Frenech, 2003; Suh and Han, 2002; Bobbitt and Dabholkar, 2001; Venkatesh and Davis, 2000; Bajaj and Nidumolu, 1998; Dick and Basu, 1994; Ajzen and Fishbein, 1980). As noted by Yang and Yoo (2004), attitude resides in the mind, precedes and produces behaviour and thus can be used to predict behaviour. Thus, attitude seems to be a well-established predictor of behaviour. Moreover, Alsajjan and Dennis (2010) noted that the impact of relative attitude should become more important in predicting consumer behaviour because internet banking increases banking customers’ choice set. They argue that in a voluntary utilitarian context, such as internet banking, it seems almost impossible that attitude would contrast with intention behaviour (Alsajjan and Dennis, 2010).

To investigate the TAM more, we put forward the following five basis hypotheses:

H1. Perceived ease of use has a positive effect on perceived usefulness.

H2. Perceived usefulness has a positive effect on attitude.

H3. Perceived ease of use has a positive effect on attitude.

H4. Perceived usefulness has a positive effect on behavioural intention.

H5. Attitude has a positive effect on behavioural intention.

Although the results of many empirical studies have proven the validity of the TAM, it has been demonstrated that the original TAM constructs explain less than 45 per cent of intention and usage variance in an e-commerce-related context, including internet banking (Celik, 2008; Chen and Wells, 2002; Suh and Han, 2002). Previous empirical research suggests that perceived usefulness and perceived ease of use might not be the only beliefs that mediate the impact of the external environment on attitude and intentions (Alsajjan and Dennis, 2010).

To remedy this deficiency, it is recommended to incorporate into the TAM, other underlying behavioural constructs and external variables to fit the user’s context, and therefore to demonstrate better predictive power regarding user’s acceptance of e-commerce (Alsajjan and Dennis, 2010; Lin *et al.*, 2007; McFarland and Hamilton, 2004). Davis *et al.* (1989) suggest that the TAM provides a basis for tracking the impact of external factors on internal beliefs, attitude, behavioural intention and behaviour. Thus, as an extension of previous research, this study introduces e-trust as an external variable to the TAM.

E-trust

In line with the previously mentioned studies, this research supports the idea that the pure application of the TAM is not adequate to explain the adoption of internet banking (Alalwan *et al.*, 2015; Ezzi, 2014; Candra, 2013; Charfeddine and Nasri, 2013; Ozdemir *et al.*, 2008; Cheong and Park, 2005; Luarn and Lin, 2005; Pikkarainen *et al.*, 2004). Indeed, due to the open internet technology infrastructure, the distance separating partners and the absence of human interactions, the importance of trust and trust-related concepts is increasing for internet banking (Charfeddine and Nasri, 2013; Ozdemir *et al.*, 2008).

Trust is at the heart of all kinds of relationships, it is an important catalyst in many transactional relationships and it determines the nature of many businesses (Popoola and Ibn Arshad, 2015; Alsajjan and Dennis, 2010; Yousafzai *et al.*, 2007; Wang *et al.*, 2003; Gefen *et al.*, 2003; Morgan and Hunt, 1994). The role of technology trust and of internet trust as a specific form of technology trust in the context of online banking has, also, been recognized (Yu *et al.*, 2015; Ezzi, 2014; Candra, 2013; Rullis and Sloka, 2010; Grabner-Krauter and Faullant, 2008).

Definitions and conceptualization of trust vary with disciplines. Psychologists view trust as a personal trait, sociologists consider it as a social construct and economists see it as an economic choice mechanism (McKnight *et al.*, 2002a, 2002b).

In social psychology, Rousseau *et al.* (1998) define trust as “perceptions about others’ attributes and a related willingness to become vulnerable to others”. In this sense, consumers might not use e-commerce because they lack trust in internet businesses (Grewal *et al.*, 2004). With greater trust, people

can resolve their uncertainty regarding the motives, intentions and prospective actions of others on whom they depend (Kramer, 1999), as well as save money and effort, because trust reduces monitoring and legal contract costs (Fortin *et al.*, 2002). The lack of trust in online transactions and Web vendors thus represents an important obstacle to the market penetration of e-channels (Liu *et al.*, 2004). Moreover, recent research indicates that trust has a critical influence on users' willingness to engage in online exchanges of money and sensitive personal information (Alalwan *et al.*, 2015; Ezzi, 2014; Candra, 2013; Maduku, 2013; Al-smadi, 2012; Nasri, 2011; Agarwal *et al.*, 2009; Ozdemir *et al.*, 2008).

Drawing on literature in social psychology and marketing, Doney and Cannon (1997) define trust as the perceived credibility and benevolence of a target of trust. Mcknight *et al.* (2002a, 2002b) add a third dimension of trust, which is the integrity. These are the dimensions of trust most often included in marketing research (Yu *et al.*, 2015; Yousafzai *et al.*, 2007; Schlosser *et al.*, 2006a, 2006b; Gefen *et al.*, 2003; Bhattacharjee, 2002). Janouri and Gharbi (2008) add a fourth dimension, which is the orientation to resolve problems. In this research, it is assumed that e-trust is composed of four dimensions: the perceived credibility, the benevolence, the perceived integrity and the orientation to resolve problems. The first dimension of trust, perceived credibility, is the extent to which one partner believes that the other partner has the required expertise to perform the job effectively and reliably (Bories, 2007; Chouk and Perrien, 2003; Gefen, 2002; Morgan and Hunt, 1994; Gansean, 1994). Then, trust based on a partner's expertise and reliability focuses on the objective credibility of an exchange partner: expectancy that the word or written statement of the partner can be relied on (Wang *et al.*, 2003). Wang and Emurian, (2005) refer to the perceived credibility as the belief that the electronic supplier has the required knowledge to do his job effectively. The second dimension of trust, benevolence, is the extent to which one partner is genuinely interested in the welfare of the other and is motivated by the search for common gain (Bories, 2007). It reflects the belief that the supplier wishes well to the user despite its own profits (Gefen, 2002; Gansean, 1994). So, the benevolence is the belief that the electronic merchant is interested in user interests (Wang and Emurian, 2005; Chen and Dhillon, 2005; Chouk and Perrien, 2004; Bhattacharjee, 2002). The third dimension of trust, the perceived integrity, is the belief that the other party accepts the honesty and the respect of promises and commitments (Isaac and Volle, 2008; Chouk and Perrien, 2004; Gefen, 2002). The perceived integrity is the confidence that the merchant-mail (internet banking) will not exploit the vulnerability and that it will honour its commitment by promising to protect the security of transactions and the confidentiality of information (Janouri and Gharbi, 2008; Wang and Emurian, 2005; Chouk and Perrien, 2003; Bhattacharjee, 2002). The fourth dimension of trust, the orientation to resolve problems, is the will of the supplier to resolve problems that may arise during and after the purchase, problems for which a commitment was not made (Janouri and Gharbi, 2008; Chouk and Perrien, 2003).

The importance of trust rises with uncertainty especially in intangible situations such as online services. In fact, the absence of trust may be one of the most important obstacles of

accepting online trade (Isaac and Volle, 2008) and e-banking (Pearson *et al.*, 2007). However, a high level of trust comforts partners to engage in innovative transactions (Guimond, 2008).

Many scholars emphasize the importance of trust in e-commerce acceptance. Gefen *et al.* (2003) argue that a model of technology acceptance that features more social dimensions must include trust, especially when the relations involve social uncertainty and risk, as in internet banking. Page and Luding (2003) consider that trust issues are crucial drivers of internet banking adoption, and McKnight *et al.* (1998) integrate trust into the TRA as a belief that influences intention to engage in behaviour related to a specific e-vendor. They conclude that trust is implicit to customer intentions, and at higher levels of trust, customers perceive a website as more useful. Pavlou (2003) reports that trust influences intentions through positive attitude. Alsajjan and Dennis (2010) consider that trust has a positive effect on users' perceived usefulness and attitudinal intentions towards internet banking adoption. Thus, we can assume that trust has an impact on personal beliefs about ease of use and usefulness of internet banking and has an influence on attitude towards internet banking use, which in turn leads to behavioural intention to use internet banking. Then, it is hypothesized that:

- H6. Trust has a positive effect on perceived usefulness.
- H7. Trust has a positive effect on perceived ease of use.
- H8. Trust has a positive effect on attitude.
- H9. Trust has a positive effect on intention of use.

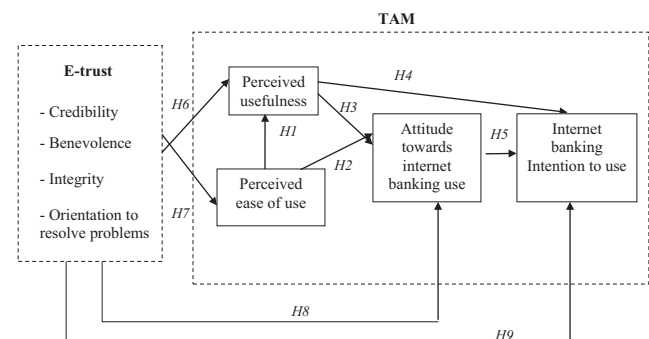
The conceptual model of the research is presented in Figure 1.

Research design and method

Measures of the constructs

A survey instrument (Appendix) was constructed by adapting measures from prior research to ensure the content validity of the scales. The standard TAM scales developed by Davis (1989) and validated by Taylor and Todd (1995a, 1995b) were used to measure perceived ease of use, perceived usefulness, attitude and behavioural intention. These were previously shown to apply well to e-commerce context (Gefen *et al.*, 2003). The measurement of trust was adapted from the scale developed by Chouk and Perrien (2005). Besides

Figure 1 Conceptual research model



traditional three dimensions attributed to the concept of trust (credibility, integrity and benevolence), this scale introduces a new dimension “orientation to solve problems”. This scale was tested and has demonstrated high reliability in e-commerce context as well (Janouri and Gharbi, 2008; Bartikowski *et al.*, 2008). Finally, the survey instrument used in this study consisted of a total of 43 items related to the eight constructs of the research model. The items were measured using a five-point Likert-type scale for all constructs. To ensure the content validity of the instrument, all construct measures were adapted from their original source and slightly modified to fit the technology context studied. The validation of the survey instrument was done by experts from the field of information technology as well as the banking industry.

Data collection

To reach business internet banking users, a Web-based survey was used. A snowball sampling method was applied. An e-mail message including the research invitation was sent to 200 Tunisian managers using the internet who had active e-mail accounts, selected from the Tunisian business directory. The sample, which belongs to different economy sectors, was asked to forward the survey to their contacts. A total of 133 surveys were collected from the participants, of which 102 were found to be usable in the data analysis.

The companies which returned the completed questionnaire are in the following sectors: services (24 per cent), ICT (19 per cent), food processing (14 per cent), chemicals (11 per cent), textiles (9 per cent), mechanical engineering (8 per cent), electricity (7 per cent) and crafts (6 per cent), in addition to five other companies in various sectors.

The questionnaire was addressed to the decision-maker in the company, who is the general director in small companies and/or the one responsible for finance in big ones. Of the total respondents, 29.3 per cent were between 26 and 35 years old, 38 per cent were between 36 and 45 years old and 23.8 per cent were between 46 and 55 years old. Only 8.9 per cent of the total respondents were over 56 years old. Most of the respondents had a high school degree (59.6 per cent), followed by bachelor degree (29.8 per cent), college degree (5.8 per cent) and other education level (4.8 per cent).

Data analysis and results

Measurement model

A confirmatory factor analysis using Amos 16 was conducted to test the reliability and the validity of the measures. Some common model-fit indices were used to assess the model's overall goodness of fit (GFI, AGFI, RMR, RMSEA, NFI, TLI, CFI, normed chi-square). As shown in Table I, majority of the model-fit indices approach or exceed their respective common acceptance levels. So, we can conclude that the measurement model has an acceptable fit with the data collected. Therefore, we can evaluate the psychometric properties of the measurement model in terms of reliability, convergent validity and discriminant validity.

Within confirmatory factor analysis, *T*-test associated with each factorial contribution is much higher than 1.96, thus confirming the significance of the relationship of each indicator with the corresponding construct. Construct

Table I Model goodness of fit

Fit indices	Recommended value	Measurement model	Structural model
GFI	>0.9	0.912	0.923
AGFI	>0.9	0.827	0.839
RMR	<0.1	0.077	0.068
RMSEA	<0.08	0.058	0.062
NFI	>0.9	0.926	0.932
TLI	>0.9	0.914	0.925
CFI	>0.9	0.949	0.953
Normed χ^2	<5	4.101	3.755

reliability, which reflects the internal consistency of the scale items measuring the same construct for the collected data, was assessed by computing Jöreskog's rho. As can be seen in Table II, the ρ coefficient for each construct was above 0.712, exceeding the common threshold value (0.70) recommended by Fornell and Larcker (1981). Thus, it is determined that the scale was reliable or internally consistent. The convergent validity of the constructs was estimated by calculating the rho of convergent validity (ρ_{cv}), which indicates the average variance extracted by the construct. The average extracted variances are all above the recommended 0.5 level (Fornell and Larcker, 1981), which means that more than half of the variances observed in the items are accounted for by their hypothesized factors. Thus, all factors in the measurement model have adequate reliability and convergent validity (Table II).

To examine discriminant validity, the shared variance between factors is compared to the average variance extracted of the individual factors (Fornell and Larcker, 1981). This analysis shows that the shared variance between factors is lower than the average variance extracted of the individual factors, confirming discriminant validity (Table II). In summary, the measurement model shows adequate reliability, convergent validity and discriminant validity (Table III).

Structural model

Similar to the measurement model, a set of indices are used to examine the structural model's goodness of fit (Table I). In comparing fit indices with their corresponding recommended values, we conclude an acceptable model fit. Thus, we can examine the path coefficients of the structural model. As

Table II Measurement model reliability and convergent validity

Construct	Reliability (ρ of Jöreskog)	Convergent validity (ρ_{cv})
Perceived usefulness (PU)	0.853	0.651
Perceived ease of use (PEU)	0.798	0.543
Attitude (ATT)	0.723	0.533
Intention use (IU)	0.912	0.832
Credibility (CRD)	0.767	0.582
Integrity (INT)	0.825	0.760
Benevolence (BNV)	0.743	0.555
Orientation to resolve problems (ORP)	0.712	0.532

Table III Measurement model discriminant validity

	PU	PEU	ATT	IU	CRD	INT	BNV	ORP
PU	0.807							
PEU	0.280	0.736						
ATT	0.301	0.377	0.730					
IU	0.453	0.341	0.618	0.912				
CRD	0.474	0.252	0.146	0.361	0.763			
INT	0.529	0.133	0.352	0.373	0.555	0.872		
BNV	0.162	0.209	0.132	0.261	0.273	0.334	0.745	
ORP	0.123	0.156	0.172	0.077	0.314	0.181	0.496	0.729

shown in Table IV, standardized path coefficients, *t*-values and variances explained for each significant equation of the hypothesized relationships between constructs in the research model are presented. As expected, the TAM basis hypotheses (*H1*, *H2*, *H3*, *H4* and *H5*) were supported, in that perceived ease of use has a positive impact on perceived usefulness and on attitude towards using internet banking. Perceived usefulness has a positive effect on attitude towards using internet banking and behaviour intention. Attitude towards using internet banking has a positive impact on behaviour intention.

The trust dimensions have a partial effect on the TAM constructs. Only credibility and integrity seem to have a significant impact on perceived usefulness, attitude towards using internet banking and behaviour intention. Thus, we conclude the partial validity of the *H6*, *H8* and *H9*, while *H7* is rejected. The explanation power of the model is 59.5 per cent, that is 59.5 per cent of the variance of the intentional behaviour is explained by exogenous variables perceived ease of use, perceived usefulness, credibility, integrity and attitude towards internet banking usage.

Discussion

This study focused on the extended TAM to explain business' intentions to use internet banking. Using the TAM as a theoretical framework, this study introduced trust-related dimensions (integrity, credibility, benevolence and orientation to resolve problems) as external variables to the original variables of the TAM (perceived ease of use, perceived usefulness, behavioural intention and attitude) to deepen business' internet banking adoption behaviour.

Table IV Hypothesis testing results

Relation	Standardized estimator	Student <i>t</i>	<i>p</i>	<i>R</i> ²
PEU → PU	0.281	4,648	0.000	0.228
CRD → PU	0.119	1,948	0.051	
INT → PU	0.157	2,674	0.007	
PU → ATT	0.344	5,085	0.000	0.302
PEU → ATT	0.095	1,862	0.063	
CRD → ATT	0.535	2,931	0.003	
INT → ATT	0.234	2,233	0.021	
PU → IU	0.233	3,444	0.002	0.595
ATT → IU	0.923	10,640	0.000	
CRD → IU	0.416	2,220	0.026	
INT → IU	0.110	2,762	0.006	

The findings of this study strongly support the relevance of using extended TAM to understand the managers' intention to adopt internet banking services. Significant effects of perceived usefulness, perceived ease of use and some trust dimensions on attitude and on behavioural intention were observed.

As postulated in TAM studies, the belief-attitude-intention-usage stream is still effective in predicting the business' internet banking behaviour. The results show that perceived ease of use has a fairly significant effect on perceived usefulness and on attitude towards using internet banking. Perceived usefulness almost determines attitude and intention to use internet banking. This is consistent with the findings of previous studies in which users' intention behaviour and attitude depend on their evaluation of the technology benefits. This evaluation is based on their expectation of a certain value provided by the combination of their beliefs about the main attributes of the technology in terms of usefulness and ease of use (Ezzi, 2014; Maduku, 2013; Agarwal *et al.*, 2009; Venkatesh and Davis, 2000; Gefen, 2000; Dishawa and Strong, 1999; Taylor and Todd, 1995a, 1995b; Davis *et al.*, 1992; Davis, 1989).

Therefore, banks have to develop business awareness about the availability of e-transactions and their relative added value to present ways of operating in terms of convenience, sales orientation, availability of latest information, delivery terms, services offered, personalization and lower costs (Popoola and Ibn Arshad, 2015; Ezzi, 2014; Maduku, 2013; Agarwal *et al.*, 2009; Hernandez and Mazzon, 2007; Chen and Barnes, 2007; Guriting and Ndubisi, 2006; Eriksson *et al.*, 2005; Wang *et al.*, 2003; Venkatesh, 2000; Venkatesh and Davis, 2000; Venkatesh and Davis, 1996).

Furthermore, evidence exists to support that perceived ease of use has a lower effect on attitude than perceived usefulness in business internet banking context. The relative importance of perceived usefulness has been widely recognized in the field of electronic banking (Ezzi, 2014; Maduku, 2013; Guriting and Ndubisi, 2006; Jaruwachirathanakul and Fink, 2005; Eriksson *et al.*, 2005; Laforet and Li, 2005; O'Cass and Frenech, 2003; Suh and Han, 2002; Liao and Cheung, 2002; Polatoglu and Ekin, 2001). This result can be justified by the research sample which includes active internet banking users; their experience in internet banking decreases their effort expectancies. Moreover, managers have, generally, a wide experience in e-commerce contexts, which increases their familiarity with virtual transactions. Research provides empirical support for this implication that perceived ease of use becomes insignificant with increased familiarity with the information systems (Liao and Cheung, 2002; Agarwal and Prasad, 1999; Venkatesh, 1999; Szajna, 1996). Perceived ease of use was found to be a more salient determinant affecting perceived usefulness. This result seems to be consistent with the findings of prior studies and suggests that evaluation of perceived ease of use by active internet banking users increases its saliency in determining perceived usefulness or the pragmatic value of internet banking (Celik, 2008; Chang and Lu, 2004; Venkatesh and Davis, 2000). The indirect effects of perceived ease of use via perceived usefulness on attitude towards using and intention to use internet banking were also

confirmed, as suggested by Celik (2008) and Suh and Han (2002).

Furthermore, we found that two trust dimensions, the credibility and the integrity, have a direct impact and an indirect impact on behavioural intention, through perceived usefulness and attitude to adopt internet banking. Reid and Levy (2008) have also revealed a direct effect of trust on the perceptual variables of the TAM. We, also, found that these two dimensions of trust, the credibility and the integrity, have a stronger influence on behavioural intention than the traditional TAM variable (perceived usefulness) in the context of business internet banking. Given that the usage of internet banking is completely voluntary and that the target user group consists of business responsables with diversified backgrounds, the findings of this study suggest that to attract more users to internet banking, it is not going to be enough to make the system easy to interact with and useful. It is of paramount importance to develop internet banking systems with valuable functions and trustworthy protection of security and privacy for the users. Internet security was identified as the most important future challenge in e-banking, while customer trust, privacy and awareness are being recognized as challenges of great importance (Gikandi and Bloor, 2010). The benevolence trust dimension was found to have a marginal impact on business' internet banking adoption. This result confirms other research findings in the context of individual internet banking adoption. Kim and Ahn (2006) found that the benevolence and the orientation to resolve problems dimensions of trust did not have a significant influence on the adoption of internet banking. Pavlou (2003), also, found that the multi-dimension trust including benevolence and credibility was only marginally related to the intention to transact online.

These results provide valuable insights for bank managers who should be aware of the importance of different beliefs on users' attitudes and adjust their marketing mix accordingly. Professionals should consider influencing internet banking behaviour not only by developing ease of use and usefulness beliefs but also by promoting professional credibility and integrity. They should, certainly, create informative interfaces for potential adopters and provide accessible internet banking sites, fast page downloads, short transaction times, easy interfaces, a wide variety of financial products/services adapted to specific business' needs, customer-friendly website and frequent-user advantages for active users. Practitioners should, also, give extra attention to prevent internet banking users from consequently experiencing access difficulties, system crashes, drop outs, service delays and system malfunctions which consequently decrease their trust belief. Agarwal *et al.* (2009) note that banks should, firstly, promote elementary services to initiate customers to use e-banking and to develop their trust towards e-banking, with the hope that once customers start using e-banking for this purpose, they might continue using e-banking for other services also. Moreover, professionals should reveal their integrity and credibility by respecting their promises, by developing the features of security and privacy and by promoting their trustworthy brand. Agarwal *et al.* (2009) highlight that security and privacy depend on the bank's image in the minds of the users and on users' belief that organizational and

technical arrangements have been made by the bank to ensure security and privacy of user data. The importance of security and privacy for the acceptance of online banking has been noted in many banking studies (Ezzi, 2014; Maduku, 2013; Agarwal *et al.*, 2009; Hernandez and Mazzon, 2007; Chen and Barnes, 2007; Black *et al.*, 2002; Howcroft *et al.*, 2002; Polatoglu and Ekin, 2001; Hamlet and Strube, 2000; Tan and Teo, 2000; Sathye, 1999). Similarly, lack of privacy and security were found to be significant obstacles to the adoption of online banking (Chen and Barnes, 2007; Sathye, 1999). Howcroft *et al.* (2002) noted that although consumers' confidence in their bank was strong, yet their confidence in the technology was weak.

Agarwal *et al.* (2009) highlighted that the variables under security and trust include transparency, reliability, safety and privacy, which depict the degree of importance users attach with risk-free operations while doing their banking transactions online. As user satisfaction with these aspects is a reflection of users' belief that an organizational and technical infrastructure exists to support use of the system, dissatisfaction regarding these parameters indicates that users do not really believe that the banks have necessary measures in place to ensure safety and privacy of user data. The spat of scams related to online fraud have instilled more fear in the minds of users, thereby increasing user demand for security and safety in their online banking transactions.

To combat this idea, internet banking professionals can organize training courses "one to one" and promotion approaches on various internet banking applications to increase the users' familiarity and to promote transparency and integrity. Internet banking professionals should consider alleviating these concerns by implementing measures to safeguard client assets and information such as authentication processes and passwords, and by supplying sufficient information about site security, giving unconditional loss guarantees, providing accessible customer service and educating customers.

As safety and security are of higher concern to users while banking online, bank professionals should, also, try to attract users by focusing on and communicating the integrity of the bank and highlight the ways in which safety and security of the data have been ensured by the bank. Banks should work to build a safe and secure innovative reputation and obtain endorsements and positive word-of-mouth that should improve perceptions of banks' trustworthiness and will, also, enhance the perceptions of potential users about the website's usefulness. Popoola and Ibn Arshad, 2015 as well as Alsajjan and Dennis (2010) suggest that besides classical communication actions, promoting internet banking requires contemporary marketing communications, such as e-mails, blogs and social networks.

Conclusion

This research studied the integration of e-trust to the TAM, by observing its impact on business' use of internet banking in Tunisia. Many studies (Barbole *et al.*, 2013; Reid and Levy, 2008; Cazier *et al.*, 2006; Lai and Li, 2005; Gefen *et al.*, 2003; Wang *et al.*, 2003) inferred that understanding information system use in online environments is an important concern and suggested additional user-oriented research in internet

banking services. Also, identifying a specific business users' cluster that have specific needs helps the bank in understanding what features should be focused on to reach this cluster and improves its operational efficiency.

Following a comprehensive literature review, two main issues were identified as influencing intentions to use technology. The first model identified in the literature examining individual's intentions to use technology is the TAM. Several studies have explored, manipulated and replicated the TAM and have found it to be a suitable model for understanding behavioural intentions to use information technology (Ezzi, 2014; Candra, 2013; Reid and Levy, 2008; Chang and Lu, 2004; Lu and al., 2005; Wang *et al.*, 2003; Gefen *et al.*, 2003). This justifies our adoption of the TAM as a background to explain internet banking use in an organizational context in Tunisia.

The second factor identified in the literature as a potential contributor to explain intention to use technology is trust. Researchers generally suggest that trust is a significant and positive contributor to individual's intention to use technology, especially in an online environment (Alalwan *et al.*, 2015; Ezzi, 2014; Candra, 2013; Maduku, 2013; Reid and Levy, 2008; Pavlou and Gefen, 2004; Gefen *et al.*, 2003; Wang *et al.*, 2003).

A revised TAM was proposed to investigate the impact of trust on the original variables of the TAM. A multi-dimensional trust variable (benevolence, integrity, credibility, orientation to resolve problems) was proposed to have significant influence on the intention to use internet banking directly and indirectly through perceived usefulness, perceived ease of use and attitude towards using internet banking. Thus, the contributions of trust on internet banking usage in Tunisian organizational context were investigated. It was shown that mainly integrity and credibility dimensions of trust determine the usefulness of internet banking, the attitude to adopt e-banking services and the behavioural intention.

The contributions of this study to business internet banking adoption are twofold. First, it successfully applied the extended TAM in a new information context. Second, the trust variable was found to be an important determinant of perceived usefulness, attitude towards internet banking and behavioural intention. Users' perception that e-transactions are easy and controllable is essential for business' internet banking adoption, because ease of use and trust create controllability and usefulness perceptions.

The findings of this study have implications for developing usable internet banking systems. Considering the important amounts that have been invested in internet banking systems throughout the world, it is of paramount importance to ensure that business users will actually use them. To achieve this goal, attention must be given to designing easy-to-use, useful and trustworthy systems. Internet banking professionals need to develop the beliefs of usefulness, ease of use, credibility and integrity of business users regarding internet banking.

This empirical study has some limitations. First, the study findings and implications are obtained from a single study that examined a particular technology context and targeted a specific user group. Thus, additional research efforts, replicating the study in other working environments or for other emerging technologies in the banking industry, are

needed to evaluate the validity of the investigated model and our findings. Second, this study was conducted with a snapshot research approach. This reduces the ability of this study to reflect the temporal changes in the research constructs, especially when internet banking experiences increase. Longitudinal evidence might enhance our understanding of the causality and the interrelationships between variables that are important to the acceptance of internet banking. Third, self-selection bias could be a problem because only internet businesses with an active e-mail account were used in the data collection process. Therefore, offline surveys should be performed complementarily in conjunction with online surveys to collect representative samples. Fourth, the intentions of the research participants to use internet banking were measured through self-reports in this study. Although some prior studies on technology acceptance provide evidence about the strong correlation between self-reports and actual system usage (Taylor and Todd, 1995a, 1995b), future research efforts should be conducted to validate usage externally. Finally, there may be a need to extend the TAM by adding other trust-related concepts whose importance is increasing for business internet banking. While trust is only practised and exercised between and towards individuals and parties, the concept of perceived risk, which concerns perceived risk in parties' technologies and actions (Hoecht, 2004; Lim, 2003), can be a more comprehensive concept (Ozdemir *et al.*, 2008) that may improve our ability to predict business usage intention more accurately.

References

- Adams, D.A., Nelson, R.R. and Todd, P.A. (1992), "Perceived usefulness, ease of use, and usage of information technology: a replication", *MIS Quarterly*, Vol. 16 No. 2, pp. 227-247.
- Agarwal, R. and Prasad, J. (1999), "Are individual differences germane to the acceptance of new information technologies?", *Decision Sciences*, Vol. 30 No. 2, pp. 361-391.
- Agarwal, R., Rastogi, S. and Mehrotra, A. (2009), "Customers' perspectives regarding e-banking in an emerging economy", *Journal of Retailing and Consumer Services*, Vol. 16 No. 5, pp. 340-351.
- Ajzen, I. (2006), "Theory of planned behaviour", available at: <http://people.umass.edu/ajzen/tpb.diag.html#null-link> (assessed 2 February 2008).
- Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Behavior*, Prentice Hall, New York, NY.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P., Lal, B. and Williams, M.D. (2015), "Consumer adoption of internet banking in Jordan: examining the role of hedonic motivation, habit, self-efficacy and trust", *Journal of Financial Services Marketing*, Vol. 20 No. 2 (1 June), pp. 145-157, available at: <http://www.ingentaconnect.com/content/pal/fsm;jsessionid=20kurh2dijeim.alice>
- Alsajjan, B. and Dennis, C. (2010), "Internet banking acceptance model: across – market examination", *Journal of Business Research*, Vol. 63 No. 9, pp. 0148-2963.
- Al-smadi, M.O. (2012), "Factors affecting adoption of electronic banking: an analysis of the perspectives of banks' customers", *International Journal of Business and Social Science*, Vol. 3 No. 17.

- Bajaj, A. and Nidumolu, S.R. (1998), "A feedback model to understand information system usage", *Information & Management*, Vol. 33 No. 4, pp. 213-224.
- Barbole, A.N., Kharade, S.M., Shaikh, A.A. and Verma, A. (2013), "A critical analysis of current users' acceptance of on-line banking in India", Golden Research Thoughts, electronic resource, Vol. 3 No. 3, ISSN 2231-5063.
- Bartikowski, B., Chandon, J.L. and Muller, B. (2008), "Mesurer la confiance des internautes dans les sites web marchands: adaptation de l'échelle de Mcknight, Kacmar et Choudhury", *Communication au 7ème congrès sur les tendances du marketing en Europe*, Venise, 17-19 Janvier.
- Bhattacharjee, A. (2002), "Individual trust in online firms: scale development and initial test", *Journal of Management Information Systems*, Vol. 19 No. 1.
- Black, N.J., Lockett, A., Ennew, C., Winklhofer, H. and McKechnie, S. (2002), "Modelling consumer choice of distribution channels: an illustration from financial services", *International Journal of Bank Marketing*, Vol. 20 No. 4, pp. 161-173.
- Bobbitt, L.M. and Dabholkar, P.A. (2001), "Integrating attitudinal theories to understand and predict use of technology-based self-service", *International Journal of Service Industry Management*, Vol. 12 No. 5, pp. 423-450.
- Bories, D. (2007), "La confiance dans les relations acheteurs vendeurs: le rôle modérateur du cycle de vie relationnel", available at: www.escp-eap.net/conferences/marketing/2007-cp/
- Candra, S. (2013), "Revisit technology acceptance model for internet banking (Case Study: Public Banking in Indonesia)", *International Conference on Computer, Networks and Communication Engineering (ICCNCE 2013)*.
- Cao, X. and Mokhtarian, P. (2005), "The intended and actual adoption of online purchasing: a brief review of recent literature", Funded research by the University of California Transportation.
- Cazier, J.A., Benjamin, B.M. and St. Louis, R.D. (2006), "E-business differentiation through value-based trust", *Information and Management*, Vol. 43 No. 6, pp. 718-727.
- Celik, H. (2008), "What determines Turkish consumers' acceptance of internet banking?", *International Journal of Bank Marketing*, Vol. 26 No. 5, pp. 353-370.
- Chang, S. and Lu, M. (2004), "Understanding internet adoption and use behavior: a Hong Kong perspective", *Journal of Global Information Management*, Vol. 12 No. 3, pp. 21-43.
- Charfeddine, L. and Nasri, W. (2013), "The behavior intention of Tunisian banks' customers on using internet banking", *International Journal of Innovation in the Digital Economy*, Vol. 4 No. 1, pp. 16-30.
- Chen, C. and Dhillon, G.S. (2005), "Interpreting dimensions of consumer trust in e-commerce", *Information Technology and Management*, Vol. 4 No. 1.
- Chen, Q. and Wells, W.D. (2002), "Attitude toward the site II: new information", *Journal of Advertising Research*, Vol. 42 No. 2.
- Chen, Y.H. and Barnes, S. (2007), "Initial trust and online buyer behaviour", *Industrial Management & Data Systems*, Vol. 107 No. 1, pp. 21-36.
- Cheng, T.C., Lam, D.Y.C. and Yeung, A.C.L. (2006), "Adoption of internet banking: an empirical study in Hong Kong", *Decision Support Systems*, Vol. 42 No. 3, pp. 1558-1572.
- Cheong, J.H. and Park, M.C. (2005), "Mobile internet acceptance in Korea", *Internet Research*, Vol. 15 No. 2, pp. 125-140.
- Chouk, I. and Perrien, J. (2003), "Les déterminants de la confiance du consommateur lors d'un achat sur un site marchand: proposition d'un cadre conceptuel préliminaire", *Actes du XIX Congrès International de l'AFM, Tunis*, 9-10 Mai.
- Chouk, I. and Perrien, J. (2004), "Les facteurs expliquant la confiance du consommateur lors d'un achat sur un site marchand: une étude exploratoire", *Décisions Marketing*, Vol. 35, pp. 75-86.
- Chouk, I. and Perrien, J. (2005), "La confiance du consommateur vis-à-vis d'un marchand internet: proposition d'une échelle de mesure", *Revue Française du Marketing*, Vol. 205 No. 1, pp. 5-20.
- Davis, F.D. (1989), "Perceived usefulness, perceived ease of use and user acceptance of computer technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-337.
- Davis, F.D. (1993), "User acceptance of information technology: system characteristics, user perceptions and behavioral impacts", *International Journal of Man-Machine Studies*, Vol. 38 No. 3, pp. 475-487.
- Davis, F.D., Bagozzi, R. and Warshaw, P.R. (1992), "Extrinsic and intrinsic motivation to use computers in the workplace", *Journal of Applied Social Psychology*, Vol. 22 No. 14, pp. 1109-1130.
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8.
- Dick, A.S. and Basu, K. (1994), "Customer loyalty, toward an integrated conceptual framework", *Journal of the Academy of Marketing Science*, Vol. 22 No. 2.
- Dishawa, M.T. and Strong, D.M. (1999), "Extending the technology acceptance model with task-technology fit constructs", *Information Management*, Vol. 36 No. 1, pp. 9-21.
- Doney, P.M. and Cannon, J.P. (1997), "An examination of the nature of trust in buyer-seller relationships", *Journal of Marketing*, Vol. 61 No. 2, pp. 35-51.
- Eriksson, K., Kerem, K. and Nilsson, D. (2005), "Customer acceptance of internet banking in commerce: using and extension of the technology acceptance model", *Journal of Internet Banking and Commerce*, Vol. 12 No. 3, pp. 1-26.
- Ezzi, S.Z. (2014), "A theoretical model for internet banking: beyond perceived usefulness and ease of use", *Archives of Business Research*, Vol. 2 No. 2, pp. 31-46.
- Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.
- Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobserved variables and measurement errors", *Journal of Research Marketing*, Vol. 27 No. 3, pp. 39-50.
- Fortin, D.R., Dholakia, R.R. and Dholakia, N. (2002), "Introduction to special issue, emerging issues in electronic

- marketing: thinking outside the square”, *Journal of Business Research*, Vol. 55 No. 8, pp. 623-627.
- Fusilier, M. and Durlabhji, S. (2005), “An exploration of student Internet use in India”, *Campus-Wide Information Systems*, Vol. 22 No. 4, pp. 233-246.
- Gansean, S. (1994), “Determinants of long term orientation in buyer seller relationships”, *Journal of Marketing*, Vol. 58 No. 1.
- Gefen, D. (2000), “E-commerce: the role of familiarity and trust”, *Omega*, Vol. 28 No. 6.
- Gefen, D. (2002), “Reflections on the dimensions of trust and trust worthiness among online consumers”, *The DATA BASE for Advances Information Systems*, Vol. 33 No. 3.
- Gefen, D., Karahanna, E. and Straub, D.W. (2003), “Trust and TAM in online shopping: an integrated model”, *MIS Quarterly*, Vol. 27 No. 1.
- Gefen, D. and Straub, D. (2003), “Managing user trust in b to c e- service”, *e- Service Journal*, Vol. 2 No. 2, pp. 7-24.
- Gerrard, P. and Cunningham, J.B. (2003), “The diffusion of internet banking among Singapore consumers”, *International Journal of Bank Marketing*, Vol. 21 No. 1, pp. 16-28.
- Gikandi, J. and Bloor, C. (2010), “Adoption and effectiveness of electronic banking in Kenya”, *Electronic Commerce Research and Applications*, Vol. 9 No. 1, pp. 277-282.
- Grabner-Krauter, S. and Faullant, R. (2008), “Consumer acceptance of internet banking: the influence of internet trust”, *International Journal of Bank Marketing*, Vol. 16 No. 7, pp. 483-504.
- Grewal, D., Iyer, G. and Levy, M. (2004), “Internet retailing: enablers, limiters and market consequences”, *Journal of Business Research*, Vol. 57 No. 7, pp. 703-7013.
- Guimond, A. (2008), “La notion de confiance et le droit du commerce électronique”, *LX Electronica*, Vol. 12 No. 3.
- Guriting, P. and Ndubisi, N.O. (2006), “Borneo online banking: evaluating customer perceptions and behavioural intention”, *Management Research News*, Vol. 29 Nos 1/2, pp. 6-15.
- Ha, S. and Stoel, L. (2008), “Promoting customer-retailer relationship building: influence of customer trustworthiness of customer loyalty programme marketing”, *Journal of Customer Behaviour*, Vol. 7 No. 3, pp. 215-229.
- Hamlet, C. and Strube, M. (2000), “Community banks go online”, *ABA Banking Journal's, White Paper/Banking on the Internet*, Vol. 92 No. 3, pp. 61-65.
- Hausman, A. and Siekpe, J. (2008), “The effect of web interface features on consumer online purchase intentions”, *Journal of Business Research*, Vol. 8 No. 1, pp. 1-9, Corrected Proof, Available online 4 March 20.
- Hernandez, J.M. and Mazzon, J.A. (2007), “Adoption of internet banking: proposition and implementation of an integrated methodology approach”, *International Journal of Bank Marketing*, Vol. 25 No. 2, pp. 72-88.
- Hoecht, A. (2004), “Control in collaborative research and technology development: a case study in the chemical industry”, *Journal of Managerial Psychology*, Vol. 19 No. 3, pp. 218-234.
- Howcroft, B., Hamilton, R. and Hewer, P. (2002), “Consumer attitude and the usage and adoption of home-based banking in the United Kingdom”, *International Journal of Bank Marketing*, Vol. 20 No. 3, pp. 111-121.
- Hu, P.J., Chau, P.Y.K., Sheng, O.R.L. and Tam, K.Y. (1999), “Examining the technology acceptance model using physician acceptance of telemedicine technology”, *Journal of Management Information Systems*, Vol. 16 No. 2, pp. 91-112.
- Igbaria, M., Parasuraman, S. and Baroudi, J.J. (1996), “A motivational model of microcomputer usage”, *Journal of Management Information Systems*, Vol. 13 No. 1, pp. 127-144.
- Isaac, H. and Volle, P. (2008), *e-Commerce: de la Stratégie à la Mise en Œuvre Opérationnelle*, Pearson Education, NJ.
- Janouri, F. and Gharbi, J.E. (2008), “Affrontement entre le risque perçu et le capital marque dans la formation de la confiance dans un site marchand”, available at: www.esscp-eap.net/conferences/marketing/2008-cp/Materiali/Paper/Fr/Janouri-Gharbi.pdf
- Jaruwachirathanakul, B. and Fink, D. (2005), “Internet banking adoption strategies for a developing country: the case of Thailand”, *Internet Research*, Vol. 15 No. 3, pp. 295-311.
- Karahanna, E., Straub, D.W. and Chervany, N.L. (1999), “Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs”, *MIS Quarterly*, Vol. 23 No. 2, pp. 183-213.
- Kim, M.S. and Ahn, J.H. (2006), “Comparison of trust sources of an online market-maker in the e-marketplace: buyer's and seller's perspectives”, *Journal of Computer Information Systems*, Vol. 47 No. 1, pp. 84-94, available at: www.monografias.com/trabajos64/factors-influence-consumers/factors-influence-consumers2.shtml#ixzz2cp41sFZS
- Kramer, R.M. (1999), “Trust and distrust in organizations: emerging perspectives, enduring questions”, *Annual Review of Psychology*, Vol. 50 No. 1, pp. 569-598.
- Laforet, S. and Li, X. (2005), “Consumers: attitudes towards online and mobile banking in China”, *International Journal of Bank Marketing*, Vol. 23 No. 5, pp. 362-380.
- Lai, V.S. and Li, H. (2005), “Technology acceptance model for internet banking: an invariance analysis”, *Information & Management*, Vol. 42 No. 2, pp. 373-386.
- Liao, Z. and Cheung, M.T. (2002), “Internet-based e-banking and consumer attitudes: an empirical study”, *Information & Management*, Vol. 39 No. 4, pp. 283-295.
- Lim, N. (2003), “Consumers' perceived risk: sources versus consequences”, *Electronic Commerce Research and Applications*, Vol. 2 No. 3, pp. 216-228.
- Lin, C.H., Shih, H.Y. and Sher, P.J. (2007), “Integrating technology readiness into technology acceptance: the TRAM model”, *Psychology & Marketing*, Vol. 24 No. 7, p. 641.
- Lin, J. and Lu, H. (2000), “Towards an understanding of the behavioural intention to use a web site”, *International Journal of Information Management*, Vol. 20 No. 1, pp. 197-208.
- Liu, C., Jack, M., June, L. and Chun, Y. (2004), “Beyond concern: a privacy-trust-behavioral intention model of electronic commerce”, *Information & Management*, Vol. 42 No. 2, pp. 127-142.
- Luarn, P. and Lin, H. (2005), “Toward an understanding of the behavioural intention to use mobile banking”, *Computers in Human Behaviour*, Vol. 21 No. 6, pp. 873-891.

- McFarland, D. and Hamilton, D. (2004), "Adding contextual specificity to the technology acceptance model", *Computers in Human Behaviour*, Vol. 22 No. 3, pp. 427-447.
- McKechnie, S., Winklhofer, H. and Ennew, C. (2006), "Applying the technology acceptance model to the online retailing of financial services", *International Journal of Retail & Distribution Management*, Vol. 34 Nos 4/5, pp. 388-410.
- McKnight, D., Choudhury, V. and Kamcar, C. (2002b), "The impact of initial consumer trust on intentions to transact with a web site: a trust building model", *Journal of Strategic Information Systems*, Vol. 11 No. 1, pp. 297-323.
- McKnight, D., Cummings, L. and Chervany, N. (1998), "Initial trust formation in new organizational relationships", *Academy of Management Review*, Vol. 23 No. 3, pp. 473-490.
- McKnight, D.H., Choudhury, V. and Kamcar, C. (2002a), "Developing and validating trust measures for e-commerce: an integrative typology", *Information Systems Research*, Vol. 13 No. 3.
- Maduku, D.K. (2013), "Predicting retail banking consumers' attitude towards internet banking services in South Africa", *Southern Africa Business Review*, Vol. 17 No. 3.
- Moon, J. and Kim, Y. (2001), "Extending the tam for a word wide web context", *Information and Management*, Vol. 38 No. 4.
- Morgan, R. and Hunt, S. (1994), "The commitment-trust theory of relationship marketing", *Journal of Marketing*, Vol. 58 No. 3.
- Nasri, W. (2011), "Factors influencing the adoption of internet banking in Tunisia", *International Journal of Business and Management*, Vol. 6 No. 8.
- Norazah, M.S. and Norbayah, M.S. (2009), "Exploring the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention towards using 3g mobile service", *Internet Journal*, Vol. 3 No. 3, pp. 1-11.
- Norazah, M.S., Ramayah, T. and Norbayah, M.S. (2008), "Internet shopping acceptance: examining the influence of intrinsic versus extrinsic motivations", *Direct Marketing: An International Journal*, Vol. 2 No. 2, pp. 97-110.
- O'cass, A. and Frenech, T. (2003), "Web retailing adoption: exploring the nature of Internet users web retailing behavior", *Journal of Retailing and Consumer Services*, Vol. 10 No. 2.
- Ozdemir, S., Trott, P. and Hoecht, A. (2008), "Segmenting internet banking adopter and non-adopters in the Turkish retail banking sector", *International Journal of Bank Marketing*, Vol. 26 No. 4, pp. 212-236.
- Page, C. and Luding, Y. (2003), "Bank managers' direct marketing dilemmas – consumers' attitudes and purchase intention", *The International Journal of Bank Marketing*, Vol. 21 No. 3, pp. 147-163.
- Pavlou, P.A. (2003), "Consumer acceptance of electronic commerce: integrating trust and risk with technology acceptance model", *International Journal of Electronic Commerce*, Vol. 7 No. 3.
- Pavlou, P.A. and Gefen, D. (2004), "Building effective online marketplaces with institution based trust", *Information Systems Research*, Vol. 15 No. 1, pp. 37-59.
- Pearson, J.M. and Mdnor, Khalil (2007), "The influence of trust on internet banking acceptance", *Journal of Internet Banking and Commerce*, Vol. 12 No. 2, available at: www.arraydev.com/commerce/jibc/
- Pikkarainen, T., Pikkarainen, K., Karjaluo, H. and Pahlila, S. (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, Vol. 14 No. 3, pp. 224-235.
- Polatoglu, V.N. and Ekin, S. (2001), "An empirical investigation of the Turkish consumers' acceptance of internet banking services", *International Journal of Bank Marketing*, Vol. 19 No. 4, pp. 156-165.
- Popoola, N.F. and Ibn Arshad, M.D.R. (2015), "Strategic approach to build consumers trust in adoption of internet banking in Nigeria", *Journal of Internet Banking and Commerce*, Vol. 20 No. 1.
- Reid, M. and Levy, Y. (2008), "Integrating trust and computer self-efficacy with TAM: an empirical assessment of customers' acceptance of Banking Information Systems (BIS) in Jamaica", *Journal of Internet Banking and Commerce*, Vol. 13 No. 3, pp. 1-19.
- Rousseau, D., Sitkin, S., Burt, R. and Camerer, C. (1998), "Not so different after all: a cross-discipline view of trust", *Academy of Management Review*, Vol. 23 No. 3, pp. 393-404.
- Rullis, H. and Sloka, B. (2010), "Marketing within Internet banking in Latvia: possibilities and challenges in commercial banks", *Economics and Management*, Vol. 15 No. 1, pp. 705-710.
- Sathye, M. (1999), "Adoption of internet banking by Australian consumers: an empirical investigation", *International Journal of Bank Marketing*, Vol. 17 No. 7, pp. 324-334.
- Sayar, C. and Wolfe, S. (2007), "Internet banking market performance: Turkey versus the UK", *International Journal of Bank Marketing*, Vol. 25 No. 3, pp. 122-141.
- Schlosser, A.E., White, T.B. and Lloyd, S.M. (2006a), "Converting web site visitors into buyers: how web site investment increases consumer trusting beliefs and online purchase intentions", *Journal of Marketing*, Vol. 70 No. 2.
- Schlosser, A.E., White, T.B. and Lloyd, S.M. (2006b), "Converting web site visitors into buyers: how web site investment increases consumer trusting beliefs and online purchase intentions", *American Marketing Association*, Vol. 70 No. 2, pp. 133-148.
- Shih, H. (2004), "Extended technology acceptance model of Internet utilization behavior", *Information and Management*, Vol. 41 No. 6.
- Suh, B. and Han, I. (2002), "Effect of trust on customer acceptance of internet banking", *Electronic Commerce Research and Applications*, Vol. 1 No. 1.
- Szajna, B. (1996), "Empirical evaluation of the revised technology acceptance model", *Management Science*, Vol. 42 No. 1, pp. 85-92.
- Tan, M. and Teo, T.S.H. (2000), "Factors influencing the adoption of internet banking", *Journal of the Association for Information Systems*, Vol. 1 No. 5, pp. 1-38.
- Taylor, S. and Todd, A. (1995a), "Assessing information technology usage: the role of prior experience", *MIS Quarterly*, Vol. 16 No. 4.

- Taylor, S. and Todd, P.A. (1995b), "Understanding information technology usage: a test of competing models", *Information System Research*, Vol. 6 No. 2.
- Teo, T.S.H., Lim, V.K.G. and Lai, R.Y.C. (1999), "Intrinsic and extrinsic motivation in internet usage", *International Journal of Management Science*, Vol. 27 No. 1, pp. 25-37.
- Triandis, H.C. (1979), "Values, attitudes and interpersonal behavioural", *Nebraska Symposium on Motivation*, Vol. 27 No. 1, pp. 195-259.
- Venkatesh, V. (1999), "Creating favorable user perceptions: exploring the role of intrinsic motivation", *MIS Quarterly*, Vol. 23 No. 2, pp. 239-260.
- Venkatesh, V. (2000), "Determinants of perceived ease of use: integrating control, intrinsic motivation and emotion into the technology acceptance model", *Information Systems Research*, Vol. 11 No. 4.
- Venkatesh, V. and Davis, F.D. (1996), "A model of the antecedents of perceived ease of use: development and test", *Decision Sciences*, Vol. 27 No. 3, pp. 451-481.
- Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, Vol. 27 No. 3, pp. 425-478.
- Wang, Y.D. and Emurian, H.H. (2005), "An overview of online trust: concepts, elements, and implications", *Computers in Human Behaviour*, Vol. 21 No. 1, pp. 105-125.
- Wang, Y.S., Wang, Y.M., Lin, H.H. and Tang, T.I. (2003), "Determinants of user acceptance of internet banking: an empirical study", *International Journal of Service Industry Management*, Vol. 14 No. 5, pp. 501-519.
- Yang, H. and Yoo, Y. (2004), "It's all about attitude: revisiting the technology acceptance model", *Decision Support Systems*, Vol. 38 No. 1, pp. 19-31.
- Yousafzai, S.Y., Foxalle, G.R. and Pallister, J.G. (2007), "Technology acceptance: a meta analysis of the TAM", *Journal of Modeling in Management*, Vol. 2 No. 3.
- Yu, P.L., Balaji, M.S. and Khong, K.W. (2015), "Building trust in internet banking: a trustworthiness perspective", *Industrial Management & Data Systems*, Vol. 115 No. 2, pp. 235-252.
- banking in Jordan: examining the role of hedonic motivation, habit, self-efficacy and trust", *Journal of Financial Services Marketing, Supplied Special Issue: Academy of Marketing Conference*, Vol. 20 No. 2, pp. 145-157.
- Bendana, M. and Rowe, F. (2003), "Du minitel à l'internet: perception du risque et transition chez les internautes utilisateurs des services bancaires", *Annales des télécommunications*, Vol. 58 Nos 1/2.
- Childers, T.L., Peck, J. and Cason, S. (2001), "Hedonic and utilitarian motivations for online retail shopping behavior", *Journal of Retailing*, Vol. 77 No. 4.
- Friedman, B., Kahn, P. and Howe, D. (2000), "Trust online", *Communications of the ACM*, Vol. 43 No. 1, pp. 34-40.
- Guerrero, M.M., Egea, J.M.O. and Gonzalez, M.V.R. (2007), "Application of the latent class regression methodology to the analysis of Internet use for banking transactions in the European Union", *Journal of Business Research*, Vol. 60 No. 2, pp. 137-145.
- Gyampah Amoako, K. (2004), "ERP implementation factors: a comparison of managerial and end user perspectives", *Business Process Management Journal*, Vol. 10 No. 2.
- Huang, E. (2005), "The acceptance of women - centric web sites", *The Journal of Computer Information Systems*, Vol. 45 No. 4.
- Lu, H., Hsu, C. and Hsu, H. (2005), "An empirical study of the effects of perceived risk upon intention to use online applications", *Information Management & Computer Security*, Vol. 13 No. 2, pp. 106-120.
- Meuter, M.L., Ostrom, A.L., Roundtree, R.I. and Bitner, M.J. (2000), "Self service technologies: understanding customer satisfaction with technology-based service encounters", *Journal of Marketing*, Vol. 64 No. 3.
- Mukherjee, A. and Nath, P. (2003), "A model of trust in online relationship banking", *International Journal of Bank Marketing*, Vol. 21 No. 1, pp. 5-15.
- Nasri, W. and Charfeddine, L. (2012), "Factors affecting the adoption of Internet banking in Tunisia: an integration theory of acceptance model and theory of planned behavior", *Journal of High Technology Management Research*, Vol. 23 No. 1, pp. 1-14.
- Yousafzai, S.Y., Pallister, J.G. and Foxall, G.R. (2009), "Multi-dimensional role of trust in internet banking adoption", *The Service Industries Journal*, Vol. 29 No. 5, pp. 591-605.
- Zaoui, I. and Akremi, A.E. (2003), "L'intention d'achat du consommateur sur internet: déterminants et rôle modérateur de la confiance, cas du site marchand du magasin général", *Proceedings of the 8th AIM Conférence, Grenoble*.

Further reading

- Al Ali, S. (2004), "La crédibilité perçue comme facteur explicatif du comportement des internautes", Journée du e-marketing, Université de Nantes, Quai de Tourville.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P., Lal, B. and Williams, M.D. (2014), "Consumer adoption of Internet

Appendix. Survey instrument

Please rate the following questions from regarding the bank's Website service on the following scale:
Strongly Disagree (1) Disagree (2) Neither agree nor disagree (3) Agree (4) Strongly Agree (5)

Perceived Ease of Use	
Learning to use to bank's Website is easy for me	1 2 3 4 5
It would be easy for me to become skilful in using the bank's Website	1 2 3 4 5
I find the bank's Website easy to use	1 2 3 4 5
My interaction with the bank's Website is clear and understandable	1 2 3 4 5
Perceived Usefulness	
Using the bank's Website improves my banking effectiveness	1 2 3 4 5
Using the bank's Website improves my banking productivity	1 2 3 4 5
Using the bank's Website improves my banking experience	1 2 3 4 5
I find using the bank's Website useful	1 2 3 4 5
Attitude	
In my opinion, it is desirable to use the banks Website	1 2 3 4 5
Using bank's Website is a pleasant experience	1 2 3 4 5
Using bank's Website is a wise idea	1 2 3 4 5
Intention to Use	
I intend to use the bank's Website to carry out routine banking transactions	1 2 3 4 5
As much as is possible, I will use the bank's Website on a regular basis	1 2 3 4 5
I will strongly recommend others to use the bank's Website	1 2 3 4 5
Credibility	
My bank's Website is expert in banking	1 2 3 4 5
My bank's Website is efficient	1 2 3 4 5
I believe the bank's Website will keep the promises made	1 2 3 4 5
Integrity	
I believe in the information provided by my bank's Website	1 2 3 4 5
I trust the bank's Website to do the right job	1 2 3 4 5
I believe the bank's Website has security feature to protect users	1 2 3 4 5
I feel secure putting my personal information in the bank's Website	1 2 3 4 5
I can use the bank's Website safely	1 2 3 4 5
The bank's Website I am using is totally trustworthy	1 2 3 4 5
Benevolence	
The bank's Website is constantly modified to account technological development	1 2 3 4 5
I think the bank's Website is always looking to improve its responses to consumer needs	1 2 3 4 5
The bank's Website has a design that shows respect for its users	1 2 3 4 5
I believe the bank's Website keep my best interest in mind	1 2 3 4 5
Orientation to resolve problems	
I think the bank's Website show interest in the problems of its customers	1 2 3 4 5
In case of problems, I think it will be easy to make a claim	1 2 3 4 5

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