Determinants of Islamic banking adoption in Tunisia: empirical analysis

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Abstract

Purpose – The purpose of this paper is to identify the main factors influencing the adoption of Islamic banking services in Tunisia.

Design/methodology/approach – The paper presents primary data collected by self-administered questionnaires involving a sample of 239 respondents located in Tunis city. Respondents were conventional banks' customers who were actually non-users of Islamic banking. A descriptive statistical analysis was conducted to determine consumers' awareness of Islamic banking.

Findings – The results revealed that Islamic bank reputation, relative advantage of Islamic banking and its compatibility with consumer religious beliefs, values, lifestyle and banking habits influence positively the intention to use it. However, it seems that perceived complexity and risk impact negatively the consumer intention to adopt this new financing system. The major finding of this study is that there is a general lack of consumer awareness about Islamic banking in Tunisia.

Practical implications – By identifying the drivers and inhibitors of Islamic banking acceptance among potential adopters, this research aim to help banks' managers to target their actions and strategies more effectively.

Originality/value – This study is one of the earliest to be conducted on customers' perception and willingness to adopt Islamic banking services in Tunisia. It makes a contribution to the Islamic banking adoption literature by extending and testing the diffusion innovation theory (Rogers, 2003) in the context of Tunisia.

Keywords Consumer behaviour, Developing countries, Behaviour, Banking, Consumer attitudes, Customer surveys

Paper type Research paper

Introduction

For the last two decades, Islamic banking has registered exponential growth throughout the world, with annual growth of 20 per cent globally (Global Islamic Finance Report, 2012). In 2013, the amount of Islamic banking assets was estimated to be $1.7 trillion and expected to attain 3.4 trillion by 2018 (World Islamic Banking Competitiveness Report, 2013-2014). However, this industry is under-served in many markets outside the Gulf Cooperation Council and Malaysia. Several potential markets with large Muslim populations remain largely untapped, such as North Africa countries. In 2011, the African Development Bank indicated an underdevelopment of Islamic banking in North Africa in comparison with the Gulf region and South East Asia. The rankings of the countries of North Africa in terms of Sharia-compliant assets are very low and are not in the Top 10. Egypt has a slightly higher share of total assets

represented by Islamic banks (4.9 per cent). In Algeria and Tunisia, the shares are 1.1 and 2.2 per cent, respectively (African Development Bank, 2011). Demirguc-Kunt *et al.* (2013) reported that the Islamic banking penetration remains low in Algeria, Egypt, Morocco and Tunisia, where only 2 per cent of adults in these countries are users of Sharia-compliant banking services.

This paper is particularly interested in Tunisia in which Islamic finance, despite its emergence in 1983, remains in an embryonic state. The Tunisian banking sector has been dominated by conventional banking for nearly a century. Currently, Al-Baraka (an off-shore Islamic bank established in Tunisia on 1983) and Zitouna Bank (the first Islamic local bank launched in 2010) are the two players allowed to offer Islamic financial services to the domestic retail market. These banks' local banking activity is very limited; they represent 2 per cent of the total financial assets, which is US$1.07 billion. Nevertheless, since the Arab Spring, the demand for Islamic banking services has increased significantly and a great emphasis has been accorded by local authorities to develop this industry. According to Thomson Reuters (2013), there is a sizeable demand for Islamic finance in Tunisia, and a large proportion of the Tunisian market is inclined toward Sharia-compliance. Islamic finance assets are estimated to achieve 40 per cent of the total financial assets in five years, which would represent $28.5 billion in 2018. All of this suggests that there is a very high potential for Islamic banking in Tunisia and a large opportunity for Islamic banks to increase their market share and improve their competitiveness against a dominant long-established conventional banking system. However, this statement also denotes the presence of certain inhibitors that slow the acceptance of Islamic banking products in this country.

This paper explores the status of Islamic banking in Tunisia; the objective is to examine the factors that influence the consumer acceptance of Islamic banking as a new banking service among potential adopters (non-users of Islamic banking products or services, i.e., non-adopters segment). Therefore, this study extends the innovations diffusion theory (Rogers, 2003) by explaining the Islamic banking adoption in the Tunisian context. Few have explored this issue (Echchabi *et al.*, 2014), and this study is intended to fill this gap.

The results of this study will be significantly practical and helpful for marketers as well as different banks' managers to target their actions and strategies more effectively. These individuals can help banks to implement new strategies or to readjust their existing strategies to tap the potential Islamic banking sector in Tunisia.

This paper is divided into four parts: the first part contains a literature review on Islamic banking adoption. The second part presents the research methodology and analysis tools adopted in this study. The findings are presented and discussed in the third part. The final part consists of the conclusion, theoretical and practical implications and finally, limitations and future research.

Literature review and hypotheses development

The study of consumer behaviour toward Islamic banking products and services has recently received more attention, and various factors that encourage customers to adopt Islamic banking have been identified. However, there have been conflicting results regarding the variables that affect consumer preference for Islamic banking products and services. In fact, several research studies in various contexts (Haron *et al.*, 1994; Metawa and Almossawi, 1998; Naser *et al.*, 1999; Okumus, 2005; Dusuki and Abdullah, 2007; Khan and Khanna, 2010; Echchabi and Aziz, 2012a; Souiden and Marzouki, 2015; Souiden and Jabeur, 2015; Abou-Youssef *et al.*, 2015) have empirically

supported the idea that religious beliefs play a significant role in the consumer decision regarding Islamic banking products and services, determining that the beliefs are the main motivation behind their use. In contrast to these findings, numerous studies reported that religious beliefs are not the sole reason impacting the consumer decision to adopt Islamic banking services; factors such as the bank's reputation and image, good social responsibility practices, convenience, friendliness and competency of bank personnel, quality of services, confidentiality, pricing policy (high-profit rate, lower product pricing and lower service charge), media advertisement, social influence and consumer awareness are also considered by consumers as determinants in selecting an Islamic bank (Erol *et al.*, 1990; Haron *et al.*, 1994; Gerrard and Cunningham, 1997; Metawa and Almossawi, 1998; Dusuki and Abdullah, 2007; Rammal and Zurbrugg, 2007; Amin *et al.*, 2011; Thambiah *et al.*, 2011, 2012; Wahyuni, 2012; Echchabi and Aziz, 2012a, b; Faisal *et al.*, 2014; Ismail *et al.*, 2014; Aziz *et al.*, 2015; Kashif *et al.*, 2015).

Nawi *et al.* (2013) indicated six main reasons for customers to prefer Islamic banking adoption in Malaysia: the understanding of the Islamic banking concept, the Sharia-compliance, the religious contradiction, the quality and attractiveness of offerings, the willingness to deal with Islamic banks and the prospect and potentials of Islamic banking. Polat *et al.* (2014) found that religious sensitivity, quality and rapid banking are important in selecting Islamic banking in Turkey. Bizri (2014) identified trust in Islamic banks and their true compliance with Sharia, customers' familiarity with Islamic modes of finance, the cost of financing, accessibility of Islamic banks, and the quality of service as the five bank selection criteria perceived as important by Lebanese customers in deciding to patronize Islamic banks.

Souiden and Marzouki (2015) as well as Souiden and Jabeur (2015) have supported the significant influence of religious beliefs in selecting Islamic banking in Tunisia. Furthermore, others research studies (Chebab and Zribi, 2012; Ajili and Ben Garra, 2013; Kaabachi and Obeid, 2014; Slimene *et al.*, 2014) have emphasized the relevance of economic motives (profitability and cost minimization), bank image, quality of the services and the diversity of products on the consumer decision to adopt Islamic banking. Recently, Litfi *et al.* (2016) identified compliance with Sharia law, quality of service and trust as important factors in choosing Islamic bank by Tunisian customers. Moreover, it appears that gender and age are moderators' variables that influence the relationships between the selection of Islamic bank and its three determinants (i.e. quality of service, compliance with Sharia and trust).

Numerous scholars (Thambiah *et al.*, 2011, 2012; Echchabi and Olaniyi, 2012; Echchabi and Aziz, 2012a, b; Ayinde and Echchabi, 2012; Amin *et al.*, 2013; Echchabi *et al.*, 2014; Ayedh *et al.*, 2014; Aziz *et al.*, 2015, Gumela *et al.*, 2015) who integrated the theory of reasoned action, the theory of planned behaviour (Fishbein and Ajzen, 2010) and the diffusion innovation theory (TID) (Rogers, 2003) into their studies showed that variables such as subjective norm, attitude, perceived behavioural control, relative advantage, complexity, compatibility and uncertainty are relevant in influencing the customer intention to adopt Islamic banking.

In accordance with our literature review, we present the following conceptual model (Figure 1). The proposed model consists of seven variables, namely bank reputation, awareness of Islamic banking, relative advantage, compatibility, complexity, perceived risk and the consumer intention to adopt Islamic banking. The dependent variable is the consumer intention to adopt Islamic banking. Bank reputation, awareness of Islamic banking, relative advantage, compatibility, complexity and perceived risk are the independent variables.

Figure 1.
Conceptual model of
Islamic banking
services adoption
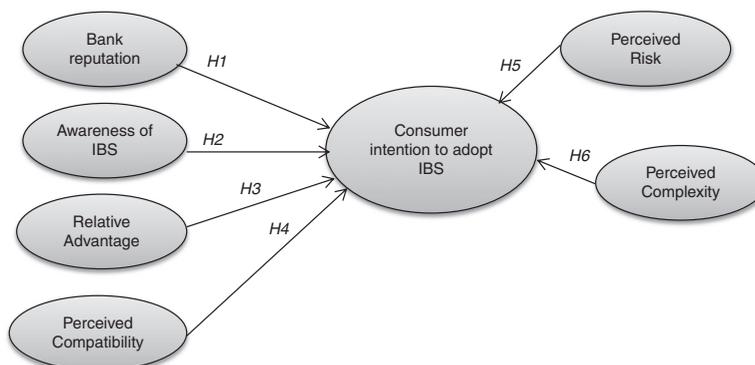
Bank reputation
Several studies have emphasized the relevance of reputation in selecting Islamic
banking (Erol *et al.*, 1990; Haron *et al.*, 1994; Gerrard and Cunningham, 1997; Metawa
and Almossawi, 1998; Naser *et al.*, 1999; Ahmad and Haron, 2002, Othman and Owen,
2001; Gait and Worthington, 2008; Lateh *et al.*, 2009; Bisharat, 2014). Dusuki and
Abdullah (2007) as well as Echchabi and Aziz (2012a) found that the selection of
Islamic banks in Malaysia is based on a combination of Islamic and financial
reputation and the quality of services offered by the bank. According to Ismail *et al.*
(2014), there is a strong link between reputation and the selection of Islamic home
financing in Malaysia. Similarly, Chebab and Zribi (2012) determined that the image
of the bank is one of the major determinants of bank selection by a Tunisian
customer. Thus, in this study, we expect a positive relation between perceived bank
reputation and the Tunisian consumer intention to adopt Islamic banking. Therefore,
we hypothesize the following:

   H1. There is a positive relation between perceived bank reputation and the Tunisian
   consumer intention to adopt Islamic banking.

Awareness of Islamic bank services and its benefits
The relevance of customer awareness on Islamic banking adoption has been
highlighted by several studies in different contexts (Haron *et al.*, 1994; Metawa and
Almossawi, 1998; Naser *et al.*, 1999; Rammal and Zurbrugg, 2007; Khattak and
Rehman, 2010; Daud *et al.*, 2011; Lateh *et al.*, 2009; Keong *et al.*, 2012; Thambiah *et al.*,
2011, 2012). A positive relation between consumer awareness and variables such as
attitude (Wahyuni, 2012; Echchabi and Aziz, 2012b, Faisal *et al.*, 2014), satisfaction
towards Islamic banking (Bashir, 2012) and the intention to use it (Gait and
Worthington, 2008; Gait, 2009; Rahim and Amin, 2011; Thambiah *et al.*, 2011;
Abdul-Hamid *et al.*, 2011; Wahyuni, 2012; Ayinde and Echchabi, 2012; Wahyuni and
Arifin, 2013; Bizri, 2014) has been established by numerous empirical studies.
Nevertheless, various studies exploring the status of Islamic banking in Tunisia
(African Development Bank, 2011; Bougatef *et al.*, 2012; Ajili and Ben Garra, 2013;
Thomson Reteurs, 2013; Kaabachi and Obeid, 2014; Boulila and Ben Slama, 2014) noted
that the Tunisian customers are unfamiliar with the concepts and mechanisms of
Islamic finance. Bougatef *et al.* (2012) interviewed 80 university teachers and revealed
that the main principles and advantages of Islamic finance are ignored by 65 per cent of

the respondents. Similarly, the findings of a national retail financial services usage and
perception survey undertaken by Thomson Reuters (2013) on a representative target
sampling (701 respondents) from key geographic areas of Tunis indicated that there is
a large gap in understanding of Islamic banking concepts (64 per cent did not have a
clear understanding of Islamic finance concepts) and of financial structures by the
majority of respondents (most knew nothing regarding Mudaraba (68 per cent),
Musharaka (64 per cent), Murabaha (64 per cent), Ijara (71 per cent) and Istisna (82 per
cent)). Therefore, we posit the following:

H2. There is a positive relation between Tunisian consumer awareness of Islamic
banking and their intention to adopt it.

Perceived relative advantage
Relative advantage has been defined as the degree to which an innovation is perceived
as better than the idea it supersedes (Rogers, 2003). In their studies, Thambiah *et al.*
(2011), Echchabi and Aziz (2012b) as well as Aziz *et al.* (2015) have assessed the relative
advantage of Islamic banking through its functional, ethical and social benefits,
including service quality (knowledge and competence of bank personnel-efficiency in
service delivery), pricing policy (costs and benefits of the products and services), social
responsibility practices of Islamic banks and social prestige, and conclude that it is the
main factor that explains its current usage by consumers. In Malaysia, Amin *et al.*
(2013) have supported the significant influence of a relative advantage on consumer
attitude towards Islamic home financing and its intention to adopt it. In a recent study,
Thomson Reteurs (2013) highlight that the most important factors in determining the
selection of Islamic banking by Tunisian customers are, in order of importance, the
bank's adherence to Islamic rules, competitive rates, quality and more offerings.
Therefore, in this paper, the relative advantage of Islamic banking will be considered in
terms of its religious, economic and ethical benefits, and we expect that the more the
relative advantage is perceived as high, the greater the likelihood that the intention to
adopt Islamic banking products by potential users will be strong. Accordingly, the
following hypothesis will be tested:

H3. There is a positive relation between the perceived relative advantage and
Tunisian consumer intention to adopt Islamic banking.

Perceived compatibility
Defined as the degree to which an innovation is perceived as consistent with the
existing sociocultural values and beliefs, past experiences and needs of adopters
(Rogers, 2003), the perceived compatibility has been found to be positively related to
Islamic banking adoption (Thambiah *et al.*, 2011; Ayinde and Echchabi, 2012; Echchabi
and Aziz, 2012b; Amin *et al.*, 2013; Aziz *et al.*, 2015). In Malaysia, Ayinde and Echchabi
(2012) as well as Amin *et al.* (2013) indicated that the decision to adopt Sharia-compliant
products such as Islamic insurance or Islamic home financing depends on their
compatibility with the customers' religious and social values, lifestyle and financial
needs. These findings are similar to those of Echchabi and Aziz (2012b) as well as Aziz
et al. (2015) in Morocco, which confirmed the significance of the compatibility of
customers' attitudes towards Islamic banking and its intention to adopt it. Similarly,
Echchabi *et al.* (2014) highlights that the compatibility of the Islamic insurance services

is an important condition for their acceptance by Tunisian customers. Therefore, the following hypothesis is developed:

H4. There is a positive relation between the perceived compatibility and the Tunisian consumer intention to adopt Islamic banking.

Perceived complexity
Complexity has been defined as the degree to which an innovation is perceived as difficult to understand and use and was considered as a usage barrier that determines the consumer's resistance to innovation (Ram and Sheth, 1989; Rogers, 1995; Gerrard and Cunningham, 2003; Gerrard *et al.*, 2006). Certain studies related to Islamic banking adoption (Thambiah *et al.*, 2011; Jamshidi and Hussin, 2013) have supported a negative relation between complexity and the usage of Islamic banking services. Abdul-Hamid and Mohd-Nordin (2001) have established that simplicity is an important factor in the patronage of Islamic banking. Similarly, Amin *et al.* (2013) showed that consumer attitude towards Islamic home financing and its intention to use it is positively related to the simplicity of the product. We define the complexity as the difficulty of potential users to understand the benefits and the manner in which Islamic banking functions. We also include the mental effort that is necessary for potential adopters to become familiar with the practice of Islamic banking services. This paper would propose that individuals tend to adopt Islamic banking services if they are perceived as easy to understand and to use. Accordingly, we make the following hypothesis:

H5. There is a negative relation between perceived complexity and Tunisian consumer intention to adopt Islamic banking.

Perceived risk
Perceived risk is defined in terms of the customer's perception of the uncertainty and potential adverse consequences of buying a product or service (Bauer, 1960). Most commonly, it has been found that there is a negative relation between perceived risk and rate adoption (Gerrard and Cunningham, 2003). In Islamic banking adoption studies (Yusof, 1999; Thambiah *et al.*, 2011; Echchabi and Aziz, 2012b), it appears that uncertainty negatively impacts the usage of Islamic banking services by consumers. Yusof (1999) and Thambiah *et al.* (2011) asserted that the uncertainty regarding Islamic banking services is associated in part with their newness and fundamental nature. This finding explains that the adoption of Islamic banking may be perceived to be riskier because this new banking service cannot be tested prior to usage and because the result of using it is not visible to the consumers in the short term. The reliability of the Islamic banking in terms of Sharia-compliance is also considered as a form of uncertainty by potential users. Thus, the following hypothesis will be tested:

H6. There is a negative relation between perceived risk and Tunisian consumer intention to adopt Islamic banking.

Methodology
Sample
This study investigates the significant variables that affect the usage of Islamic retail banking in Tunisia. In this research, respondents were conventional bank customers who were non-adopters of Islamic banking. The recent indicators regarding Islamic

banking use in Tunisia show that a small subset of consumers has adopted it, and non-adopters still comprise the majority of the target populations.

The current study uses a non-probability convenience sampling technique approach. The adopted convenience sampling method is cost-effective and easy to conduct (Zikmund, 2003). The data were collected from personal interviews using questionnaires. The period of data collection was from April to August 2013. For the data gathering, managers of four branches of commercial (traditional) banks, located in Tunis City, were contacted and their collaboration was solicited to distribute the questionnaires to their clients. A total of 400 questionnaires were distributed, and 239 were returned; this provided a response rate of 59.75 per cent.

Descriptive analysis is used to indicate the main characteristics of the simple. Table I reports that 64 per cent of the respondents are males and 36 per cent are females. Approximately 74.5 per cent of the respondents are aged 25-49 years. The majority of respondents are well educated, with 25.10 per cent who hold a diploma and approximately 48.11 per cent who completed university. Most people interviewed are private-sector employees (40.58 per cent).

The questionnaire design

This study utilizes a quantitative method of research in which the structured questionnaire was employed to gather the relevant data from respondents. The structured questionnaire was designed by considering the research conceptual model (see Figure 1). Measurement items used in this study were adapted from previous research in the field of adoption studies and usage innovation in addition to a literature

Variables	Frequency	Valid %
Gender		
Male	153	64
Female	86	36
Age		
18-24 years	23	8.8
25-34 years	65	27.2
35-49 years	113	47.3
50-65 years	22	9.2
65 years or more	18	7.5
Educational level		
No education	2	0.836
Primary school only	22	9.205
High school only	15	6.27
Secondary school only	23	9.62
Diploma only	60	25.10
University only	115	48.11
Postgraduate only	2	0.836
Professional status		
Public sector	63	26.35
Private sector	97	40.58
Self-employed	55	23.01
Retired	24	10.04

Table I.
Characteristics
of the sample

review related to Islamic banking. The questionnaire statements were modified according to the result of a pilot test conducted on a representative sample of 30 individuals. The final questionnaire adopted in this research is presented in Table II.

The questionnaire contains three sections. In the first section, the respondents were initially requested to indicate their knowledge regarding the existence of Islamic banks in Tunisia and their current usage of Islamic retail banking deposit and financing schemas.

Constructs	Measures	Sources
Bank reputation	Islamic banks have a good reputation Islamic banks have the reputation for being honest Islamic banks is known to be concerned about customers Islamic banks have the reputation for being transparent toward consumers	Jarvenpaa *et al.* (2000)
Awareness of IBS	Are you aware of Islamic banking in Tunisia: yes – no You are aware of the instruments used in the financing products Islamic banks offer (Mudaraba, Murabaha, Musharaka, Ijara) You are aware about the differences between conventional banking system and Islamic banking system The features and benefits of the Islamic banking products offered by Islamic banks are known to you In order to be known, Islamic banks should do more promotion	Bashir (2012)
Relative advantage	Islamic banks operates according to Islamic principles (Sharia) Financing on the basis of profit – loss-sharing between the lender and the borrower will be advantageous to both Investments are more secure in Islamic banks Islamic banks are more profitable comparing with the interest in traditional bank (better returns) Islamic banks provide lower cost products and services compared to conventional banking (lower services fees)	Bashir (2012), Alam *et al.* (2012), Faisal *et al.* (2014)
Compatibility	Islamic banking is in line with my values Islamic banking fits my needs Islamic banking is well suited to my lifestyle Using Islamic banking services fits well with the way I like to manage my finance	Gounaris and Koritos (2008), Jansson (2011)
Complexity	Islamic banking requires a lot of knowledge to use Islamic banking is a difficult way to conduct banking transactions Using Islamic banking can be complicated and frustrating Islamic banking transactions involve complex procedures	Gerrard and Cunningham (2003), Mansumitrchai and Chiu (2012)
Perceived risk	Using Islamic banking services could involve potential financial loss Using Islamic banking services may not provide the level of benefits that I would be expecting Using Islamic banking services could damage my self-image Using Islamic banking services could negatively affect others' opinion of me	Laroche *et al.* (2004)
Behavioural intention to use	I intend to adopt Islamic banking services in the future I predict that I will frequently use Islamic banking services in the future I will strongly recommend others to use Islamic banking services	Venkatesh and Davis (2000)

Table II.
Summary of measurement scales

This information is essential to participate in the survey; it assures us of the reliability of the answers and that the sample consists solely of non-users of Islamic banking. The following section was designed to gather information regarding the dependent and independent variables proposed in the research model, which included consumer awareness of Islamic banking, bank reputation, relative advantage, compatibility, complexity, perceived risk and the consumer intention to adopt Islamic banking. Moreover, the five-point Likert scales, which ranged from 1-Strongly Disagree to 5-Strongly Agree, were used to assess responses. A final section focused on demographic variables that involve gender, age, education level and occupation.

Data analysis
Structural equation modelling with maximum likelihood estimation using AMOS 18 was adopted to assess both the measurement model and the structural regression model. The two-phase approach was employed for the data analysis (Anderson and Gerbing, 1988). The measurement model was first evaluated to determine the internal consistency and construct validity of the multiple items scales used to operationalize the study variables. Hereafter, the structural model was tested to assess the strength and the direction of the relations among latent constructs.

Measurement model
Two-stage analysis procedures were performed to test the measurement model proposed in this study.

First, an exploratory factor analysis using principal component analysis, followed by a Varimax rotation was employed to identify the factor structure of the concepts. SPSS 18 software was used to undertake the factor analysis. As suggested by Hair *et al.* (2009), only those factors with eigenvalues greater than 1 and factor loading greater than 0.50 were retained for further analysis. This step resulted in 28 items, which formed seven factors, representing 66.646 per cent.

Following these results, a confirmatory factor analysis (CFA) using the Amos 18 package was run to purify the measures employed in this study, examine the dimensionality of the scales and assess their psychometric properties. To evaluate the fit of CFAs, several goodness-of-fit indicators were used to assess the model's goodness-of-fit, including the ratio of χ^2 (CMIN) to degrees-of-freedom (df), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), root mean square residual (RMSR) and root mean square error of approximation (RMSEA) (Anderson and Gerbing, 1988; Hair *et al.*, 2009). As shown in Table III, all individual measurement models are within the accepted levels and achieved a very good fit.

Measurement model	CMIN/DDL (*p* close)	GFI	AGFI	CFI	RMSR	RMSEA (*p* close)
Bank reputation	1.019 (0.361)	0.993	0.964	1.000	0.07	0.009 (0.550)
Awareness of IBS	0.06 (0.942)	1.000	0.998	1.000	0.006	0.000 (0.968)
Relative advantage	1.106 (0.355)	0.983	0.948	0.993	0.022	0.021 (0.651)
Compatibility	0.476 (0.621)	0.997	0.985	1.000	0.008	0.000 (0.736)
Complexity	0.036 (0.965)	1.000	0.999	1.000	0.002	0.000 (0.819)
Perceived risk	0.353 (0.703)	0.998	0.990	1.000	0.012	0.000 (0.980)
Recommended value for good fit	⩽3	⩾0.09	⩾0.09	⩾0.09	⩽0.1	⩽0.07

Table III.
Goodness-of-fit
indices for individual
variables
measurement models

The psychometric properties of the measurement model in terms of internal consistency reliability, convergent validity and discriminant validity were evaluated. To test the reliabilities of the constructs, Cronbach's α statistics were calculated. As shown in Table IV, all reliability measures were well above the recommended level of 0.07 as an indicator for adequate internal consistency (Hair *et al.*, 1995; Nunnally, 1978).

As suggested by Fornell and Larcker (1981) and Hair *et al.* (1995), evidence of convergent validity is found when the average variances extracted (AVE) shared between the constructs and their measures are at least 0.5 and if items loading on their associated factors are well above 0.5. As indicated in Table IV, the items factor loading and the AVE of each construct exceeded the acceptable cut-off of 0.5; therefore, the convergent validity for all constructs was established.

To assess discriminant validity, the AVE was computed and compared to construct correlations. For satisfactory discriminate validity, the AVE from the construct should be greater than the variance shared between a particular construct and other constructs in the model (Hair *et al.*, 1995). Table V shows that the AVEs of the individual variables are higher than the shared variances between the variables, confirming the discriminant validity.

Results and hypothesis testing

The hypotheses were tested using the structural equations model as shown in Table VI and Figure 2. In this study, the goodness-of-fit statistics was the main criterion used in

Constructs	Items	Loading	Cronbach's α	Convergent validity	AVE
Bank reputation (RP)	RP1	0.820	0.838	0.67	0.76
	RP2	0.855			
	RP3	0.801			
	RP4	0.808			
Awareness of IBS (AW)	AW1	0.849	0.804	0.54	0.638
	AW2	0.859			
	AW3	0.764			
	AW4	0.716			
Relative advantage (RA)	RA1	0.742	0.843	0.65	0.612
	RA2	0.822			
	RA3	0.825			
	RA4	0.810			
	RA5	0.737			
Compatibility (COM)	COM1	0.901	0.880	0.67	0.747
	COM2	0.884			
	COM3	0.808			
	COM4	0.855			
Complexity (COMPLE)	COMP1	0.735	0.807	0.65	0.652
	COMP2	0.711			
	COMP3	0.891			
	COMP4	0.877			
Perceived risk (PR)	RP1	0.843	0.814	0.56	0.650
	RP2	0.854			
	RP3	0.785			
	RP4	0.740			
Behavioural intention to use (BI)	BI1	0.842	0.875	0.85	0.801
	BI2	0.914			
	BI3	0.928			

Table IV.
Psychometric properties of the constructs

| Construct	AV	REP	PR	COMPLE	AW	COM	BI
AV	*0.65*						
REP	0.218	*0.67*					
PR	0.248	0.200	*0.56*				
COMPLE	0.161	0.141	0.136	*0.65*			
AW	0.249	0.224	0.225	0.171	*0.54*		
COM	0.279	0.246	0.295	0.139	0.271	*0.67*	
BI	0.206	0.206	0.164	0.079	0.169	0.317	*0.85*

Notes: RA, relative advantage; COM, compatibility; PR, perceived risk; REP, reputation; AW, awareness; COMPLE, complexity; BI, behavioural intention. Diagonal elements (in italics) are the square root of average variance extracted (AVE); Off-diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than the off-diagonal elements

No.	Hypothesis path	Parameter estimate (β)	t-value	p-value	Results
H1	REP → BI	0.397	3.917	0.000***	Supported
H2	AW → BI	−0.044	−0.616	0.538	Rejected
H3	RA → BI	0.427	2.914	0.004**	Supported
H4	COM → BI	0.399	5.475	0.000***	Supported
H5	COMPLE → BI	−0.222	−3.018	0.003**	Supported
H6	PR → BI	−0.207	−2.374	0.018**	Supported

Notes: RA, relative advantage; COM, compatibility; PR, perceived risk; REP, reputation; AW, awareness; COMPLE, complexity; BI, behavioural intention. ** $p < 0.05$; *** $p < 0.001$
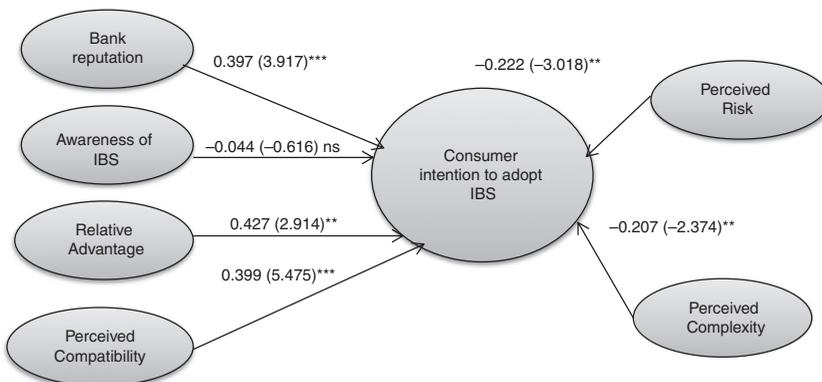
Notes: Overall model fit: CMIN/DDLl = 1.2; GFI = 0.907; AGFI = 0.871; CFI = 0.984; NFI = 0.914; TLI = 0.980 RMSEA = 0.029 (0.015; 0.040), SRMR = 0.037

testing the hypothesis models. The standardized path coefficients (β) and corresponding t-values were examined to test the significance and the strength of the relation between the dependent and independent variables. The model's key statistics are good and acceptable because the CMIN/DDLl = 1.2; GFI = 0.907; AGFI = 0.871; CFI = 0.984; NFI = 0.914; TLI = 0.980; RMSEA = 0.029 (0.015; 0.040); and SRMR = 0.037. Thus, we can conclude that the research model is valid and has a good fit to the data.

Observing the results of the hypothesis testing (*t*-statistics) (Table VI), we can establish that all paths except one were highly significant. The path that link the awareness of Islamic banking and the Tunisian consumer intention to adopt it is not significant ($\beta = -0.044$ $t = -0.616$) and was not supported (*H2*). The results show that bank reputation has a significant and positive effect ($\beta = 0.397$; $t = 3.917$) on the Tunisian consumer intention to adopt Islamic banking, which supports *H1*. It was found that relative advantage and compatibility together had a significant, positive and strong impact ($\beta = 0.427$; $t = 2.914$; $\beta = 0.399$; $t = 5.475$) on Tunisian consumer intention to adopt Islamic banking. Thus, *H3* and *H4* were also accepted. These two variables emerged as the best determinants of consumer acceptance of Islamic banking in the context of Tunisia. *H3* and *H4* state the negative effects of perceived complexity and perceived risk on the Tunisian consumer intention to adopt Islamic banking. The two hypotheses were supported ($\beta = -0.222$; $t = -3.018$; $\beta = -0.207$; $t = -2.374$); this established that perceived complexity and perceived risk were the main inhibitors of Islamic banking adoption in Tunisia.

Discussion

This study's objective is to examine the factors that affect the adoption of Islamic banking services in Tunisia. It appears that there is a positive relation between perceived bank reputation and consumer intention to adopt Islamic banking services. This finding is in accordance with previous research (Erol *et al.*, 1990; Haron *et al.*, 1994; Gerrard and Cunningham, 1997; Metawa and Almossawi, 1998; Naser *et al.*, 1999; Ahmad and Haron, 2002, Othman and Owen, 2001; Dusuki and Abdullah, 2007; Gait and Worthington, 2008; Lateh *et al.*, 2009), which revealed that customer's perception of a bank reputation was one of the most important factors in the selection of a bank, whether Islamic or conventional. Hoq *et al.* (2010) and Amin *et al.* (2013) found that bank image played an essential role in the development of consumer trust toward Islamic banking. According to these researchers, a favourable image reinforces customers' confidence in their bank and encourages them to resist competitive offerings. Chebab and Zribi (2012) revealed that the bank reputation is one of the major factors that influence bank selection by Tunisian customers. In fact, when the bank contributes to the development of the country and engages in pro-social activities, it proves to be trustworthy. The result of our study indicates that Tunisian Islamic banks need to promote their strong reputation to attract new customers and to gain their confidence and loyalty.

The results showed that awareness of Islamic banking services has no influence on the customer intention to adopt Islamic banking services. This finding is in accordance with the findings of the studies by (Doraisamy *et al.*, 2011; Abdul-Hamid *et al.*, 2011; Aziz *et al.*, 2015), which stated that there is no significant relation between the awareness and preferences of Islamic banking products and services and those of Echchabi *et al.* (2014), which indicated that consumer's awareness did not have a significant relation with the adoption of Islamic insurance in Tunisia. Nevertheless, our result contradicts the findings of (Abdullah and Abdul Rahman, 2007; Rammal and Zurbrugg, 2007; Thambiah *et al.*, 2011; Echchabi and Aziz, 2012b; Ayinde and Echchabi, 2012; Bizri, 2014) by asserting that consumer knowledge has a positive relation with the attitude towards Islamic banking products and the intention to use it. The insignificant effect of consumer awareness on the intention to adopt Islamic banking may be attributed to an insufficient power that resulted from an insufficient sample size and/or a less than meaningful effect size (ES) (Balkin and Sheperis, 2011).

To check whether our non-significant results were due to a lack of statistical power, we conducted *post hoc* power analyses using G-Power (Erdfelder *et al.*, 1996). Power analysis involves the specification of four variables: the power of a statistical test, the ES in the population (the magnitude of the result as it occurs, or would be found, in the population), the significance level (α) and the sample size (n). The power of a statistical test is the probability that a test will correctly identify a genuine effect; the analysis is the probability that it will reject a false null hypothesis. The significance level defines the risk of committing a Type I error or the probability of incorrectly rejecting a null hypothesis. Normally, alpha is set at $\alpha = 0.05$ or lower, and statistical tests are assumed to be non-directional (two-tailed). In *post hoc* analyses, the power ($1-\beta$) is computed as a function of α, the population ES parameter and the sample sizes used in the study. To evaluate the statistical power, the sample size of 239 was used; the ES: $d = 0.219$ was computed by G-Power. A significance level $\alpha = 0.05$ and a two-tailed test were assumed. The statistical power obtained for our study is 0.96, which is satisfactory with regard to Cohen's recommendation (power should be at least 0.80). According to Ellis (2010), if power levels are found to be adequate, the researcher can eliminate low power as a rival explanation and definitively conclude that the result was negative. Thus, we conclude that the result was negative, and it is unlikely that our negative findings can be attributed to a limited sample size. Consequently, we can assume the absence of government support and the limited marketing done by Islamic banks are the main reasons that explain the non-significant relations between awareness and the consumer adoption of Islamic banking.

The result of the descriptive statistical analysis presented in Tables VII and VIII reveals that 100 per cent of respondents are aware of the existence of Islamic banking in Tunisia. However, 10.1 per cent of respondents are aware of the differences between the conventional banking system and the Islamic banking system. It also appears that approximately 43.8 per cent of respondents did not know the features and benefits of the Islamic banking services, 65.5 per cent were found to be unaware of the Islamic

| | Yes | | No | |
	Frequency	%	Frequency	%
Awareness of Islamic banking in Tunisia	239	100	0	0

Table VII. Respondents' awareness level of Islamic banking in Tunisia

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
The differences between the conventional banking system and the Islamic banking system	22.9	50.3	15	10.1	1.7
The features and benefits of the Islamic banking products offered by Islamic banks	43.8	35	5.5	9.8	5.9
The instruments used in the financing products that Islamic banks offer (Mudaraba, Murabaha, Musharaka, Ijara)	65.5	28.4	3.4	1.9	0.8
To be known, Islamic banks should do more promotional activities	5.1	4.3	12.5	25.4	52.7

Table VIII. Awareness of Islamic banking

banking financing schemes and 52.5 per cent strongly agreed that Islamic banks should do more promotional activities. These results indicate that banking consumers have limited knowledge of Islamic banking products and services and also showed that the Islamic banks had not exerted adequate effort in marketing their products and services. The findings are consistent with those of recent studies that were interested in Islamic finance in the Tunisian context (Bougatef *et al.*, 2012; Thomson Reuters, 2013).

This finding implies that the Islamic banking industry must consider promoting an awareness of the products and services offered. Better consumer education through advertisements and promotions is necessary to make people more aware of the Islamic banking system and products.

The perceived relative advantage emerged as the best predictor of consumer acceptance of Islamic banking services. The finding is in accordance with those of Thambiah *et al.* (2012), Echchabi and Aziz (2012b), Amin *et al.* (2013) and Aziz *et al.* (2015). This finding contradicts the results of Echchabi *et al.* (2014), who indicated that relative advantage does not have a significant influence on the Tunisian consumer intention to adopt Islamic insurance. However, our study revealed that approximately 43.8 per cent of respondents did not know the features and benefits of the Islamic banking services. This is in accordance with Echchabi *et al.*'s (2014) findings, which highlight that Tunisian customers appear not to acknowledge the relative advantage of either Islamic or conventional insurance; this may be due to the low level of awareness.

This finding implies that it is crucial that Islamic banks implement a strategic marketing campaign that informs potential users of the usefulness of Islamic banking services. To assist consumers in appraising the value of Islamic banking adoption, financial Islamic institutions could emphasize the multiple advantages of Islamic banking services compared with conventional services in their promotional campaigns. Islamic banks should highlight not only the religious benefits but also the financial, economic, social and ethical advantages of their products, services and investments. These benefits have been identified as the main dimensions that contribute to the formation of customer value from Islamic banking (Afif and Astuti, 2009; Muhamad, 2011).

Similarly, compatibility has a significant positive influence on the consumer intention to use Islamic banking services. This finding is in accordance with the findings of Thambiah *et al.* (2011), Doraisamy *et al.* (2011), Ayinde and Echchabi (2012), Echchabi and Aziz (2012b) and Aziz *et al.* (2015), which showed that consumers who believe that Islamic banking is compatible with their religious and ethical values, lifestyle, banking habits and financial needs would be more willing to adopt it. According to Echchabi *et al.* (2014), the compatibility of Islamic insurance is an important condition for its adoption. This finding implies that the Tunisian customers remain attached to their religious and social values. Accordingly, in their communication, bank managers should highlight that Islamic banks (represented by its top personnel and policy makers) share common beliefs with their actual and potential clients and promote Islamic norms and ethical values as a way of life. Moreover, it is necessary to demonstrate the suitability of this new banking system with the consumers' current banks' habits, needs and lifestyle. This suitability is crucial in the Tunisian context in which the conventional banking system has been operating for decades and banking consumers have a strong mental association with it.

As predicted, the perceived complexity of Islamic banking negatively impacts the consumer intention to use it. This finding is similar to the findings of Thambiah *et al.* (2011); this indicates that the Islamic banking services are perceived as complex by Malaysian

users. However, this finding contradicts the results of Echchabi and Aziz (2012a, b), who found that complexity has no influence on the consumer attitude towards Islamic banking in Morocco. Polatoglu and Ekin (2001) as well as Black *et al.* (2001) opined that the perceived complexity in conducting financial transactions over the internet was inversely related to the consumer's literacy level and experience or familiarity with the internet. Rogers (2003) considered the how-to knowledge as an essential variable in the innovation-decision process, particularly for relatively complex innovations. In fact, an individual should have a sufficient level of how-to knowledge prior to adoption of the innovation. This belief implies that the more the consumers know and understand the principles and the usage of Islamic banking services, the more they will perceive this new means of banking as less complex. To reduce the perceived complexity, Islamic banks should develop strategies to educate potential clients regarding the use of Islamic banking services and continuously promote the ease of use of those novel banking services during their promotional campaigns. According to Thomson Reuters (2013), addressing the large gap in educating consumers regarding Islamic finance is key to developing confidence in this market.

The results indicate that perceived risk has a significant negative influence on the consumer intention to adopt Islamic banking services. This result is in accordance with the findings of Yusof (1999), Thambiah *et al.* (2011), Echchabi and Aziz (2012b) and Debab and Yateem (2012). This finding contradicts the results of Ayinde and Echchabi (2012) as well as Aziz *et al.* (2015), which supported a non-significant relation between uncertainty and the adoption of Islamic banking. In their study, Echchabi *et al.* (2014) asserted that Tunisian customers do not perceive Islamic insurance as uncertain and revealed that uncertainty does not have a significant impact on adoption. To assess the factors that influence trust in Bahraini retail banking after the financial crisis, Debab and Yateem (2012) asked respondents questions regarding the safety of conventional and Islamic banks. The results indicated that 61 per cent consider that conventional banks are safer than Islamic banks. This finding means that people mistrust Islamic banks and have much uncertainty regarding the reliability of these banks' transactions. The lack of knowledge and understanding regarding the Islamic banking system may explain the consumer doubt. Several studies highlight the relevance of trust in garnering customer loyalty in the context of Islamic banking (Bin Mohamed *et al.*, 2011; Hoq *et al.* 2010; Amin *et al.*, 2013; Bizri, 2014). Trusting Islamic banks will depend partly on whether they are compliant with Sharia requirements. Thus, Islamic banks should convince potential clients that they provide secure banking products that are fully consistent with Islamic principles. Banks managers should make the consumers in their promotional campaigns aware that Islamic institutions are continuously controlled by "the Sharia committee", which ensures that all banking transactions and activities are in accordance with the rules of Sharia.

Theoretical and practical implications
The findings of this study have significant contributions. From a theoretical perspective, the results presented contribute to the existing literature in a number of ways. First, the research contributes to the Islamic banking literature related to adoption and the usage intention of Islamic retail banking by extending and testing Roger's diffusion innovation theory. Actually, few studies (Thambiah *et al.*, 2011; Ayinde and Echchabi, 2012; Echchabi and Aziz, 2012b; Amin *et al.*, 2013; Echchabi *et al.*, 2014; Aziz *et al.*, 2015) have explored this issue. Second, the study

investigated the prospects of the Islamic banking industry in Tunisia. A review of Islamic banking adoption studies shows that a large portion of the published research was conducted in countries in which Islamic finance is in the development stage (Thambiah *et al.*, 2011, 2012; Jamshidi and Hussin, 2013). In contrast, minimal is written on Maghreb countries and particularly in Tunisia, where Islamic financing remains in a nascent stage (Bougatef *et al.*, 2012; Chebab and Zribi, 2012; Ajili and Ben Garra, 2013; Belaid, 2013; Slimene *et al.*, 2014; Boulila and Ben Slama, 2014; Souiden and Marzouki, 2015; Souiden and Jabeur, 2015; Litfi *et al.*, 2016). Compared with recent studies conducted in the context of Tunisia, this research shows that the religion beliefs are not the sole determinant of the acceptance of Islamic banking by Tunisian consumers. Other factors such as the bank reputation, the relative advantage of Islamic banking and its compatibility with consumers' beliefs, values, lifestyle and banking habits also influence the decision to adopt Islamic banking. Furthermore, this study confirms the lack of awareness of Islamic banking among Tunisian consumers' and highlights that this lack is the main barrier to its development in Tunisia.

There are a number of major implications for Islamic banks that arise from the results of this study. It is obvious that the lack of awareness and customer trust are the main issues that hinder the development of Islamic banking in Tunisia. In 2007, the Global Head of HSBC Amanah (2007) stated "Understanding and trust will be the key factors driving growth in the rapidly expanding Islamic banking services sector in the years to come". This statement means that the Islamic banks should focus on their reputations and communication policies to attract potential consumers.

Several research studies (McKnight *et al.*, 2002; Kim, 2012) proved that consumers will use reputation as a type of cognition trust when they have no direct knowledge of or experiential interaction with a vendor. In the context of Islamic banking, Hoq *et al.* (2010) and Amin *et al.* (2013) indicated that, generally, consumers believe that the image of Islamic banking is Sharia-compliant. This statement implies that Islamic institutions should fulfil the promises and must truly do what they claim. The institutions should have credibility to show their legitimacy (Gambling *et al.*, 1993). According to Beekun and Badawi (2005), Islamic banks must show their accountability by ensuring that they engage solely in halal activities and that business activities are conducted in a transparent and ethical manner using fairness and benevolence criteria. In addition to their financial reputation, Islamic banks should enhance their corporate social responsibility and strive to achieve their socio-economic objectives by supporting profitable businesses and contributing to the social welfare of the community. This suggestion is particularly important in many countries such as Tunisia in which, after the Arab Spring, people live in economic crises and with social tensions.

Numerous studies related to the adoption and diffusion of an innovation revealed that innovation success is determined by marketing communication during the diffusion process (Rogers, 2003; Schiffman and Kanuk, 2004). This statement means that Islamic banks should implement effective communication strategies and tools to educate consumers regarding Islamic banking and to influence their attitudes toward it. On the one hand, Islamic banks need to intensify their promotional efforts to instil the culture of Islamic banking among Tunisian people. These banks must use various communication channels and tools such as mass media advertisements, personal selling, leaflets and brochures, sponsorship and public relations. To convince consumers regarding the advantages of Islamic banking services and reduce their

uncertainty, it would also be interesting to focus upon interpersonal communication by using happy and satisfied customers' testimonials.

On the other hand, Islamic banks should be concerned with the quality of information provided to the potential consumers. It is essential to ensure that the customers obtain reliable, accurate and beneficial information concerning Islamic banking. It is crucial to explain the basic rules of the Islamic banking system in a clear and simple manner, including its differences, objectives, and benefits relative to the conventional system. Tunisian Islamic banks should highlight their contributions to the growth of the country's economic and social development and should focus more on the ease of use of their services and the way it fulfils customers' banking needs.

Conclusion, limitations and future research

The main objective of this research was to study the consumer acceptance of Islamic banking services in Tunisia given Roger's Innovation Diffusion Theory. Variables derived from Islamic banking adoption studies were added to the conceptual model. The model we developed proposed that Islamic banking acceptance can be influenced by six variables including bank reputation, consumer awareness of Islamic banking services, relative advantage, compatibility, complexity and perceived risk. The results of this study revealed that Islamic bank reputation, relative advantage of Islamic banking and its compatibility with consumer religious beliefs, values, lifestyle and banking habits positively influence the intention to use it. In contrast, it appears that perceived complexity and perceived risk are the main factors that explain the rejection of Islamic banking by consumers. The major finding of this study is that there is a general lack of awareness regarding the Islamic banking system, its features and benefits among Tunisian consumers.

This study has a number of limitations that should be considered in future research in this area. First, the sample used in this study is composed solely of non-users of Islamic banking services. Future research should attempt to conduct a comparative analysis between customers and non-customers of Islamic banks, so that more precise results on factors that affect the adoption of Islamic banking services among the two target groups can be identified. Second, this study is confined to a narrow geography area, Tunis City, such that this research's findings cannot be generalized. Future comparative research could target other cities, particularly rural areas, to gain comparative national results. Third, the variables used in this study are not exhaustive. Future studies could further extend the model tested by including other factors that are related to individual characteristics (religiosity, attitude, age and social influence) and Islamic banking attributes (size, corporate image, promotional effort and service quality). Despite the stated disadvantages, this study has presented the latest insight into understanding the factors that lead to Islamic banking acceptance in Tunisia.

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