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Exploring the Effects of Culture on Acceptance of Online Banking: A Comparative Study of Pakistan and Turkey by Using the Extended UTAUT Model

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ABSTRACT

This study investigates and compares online banking (OB) acceptance in the cultures of Pakistan and Turkey by employing the unified theory of acceptance and use of technology (UTAUT2) integrated with perceived credibility to predict customers' behavioral intentions (BI) and their usage of online banking. This study further investigates the moderation influence of five cultural dimensions on customers' usage behavior (UB). Using an online survey, data were collected through a questionnaire from 322 bank customers in Pakistan and 405 in Turkey. Structural equation modeling through Smart-PLS was used to analyze relationships among the constructs. Our analysis shows that performance expectancy (PE), hedonic motivation, habit (HT), and perceived credibility (PC) are determinants of OB acceptance in Pakistan, whereas PE, social influence, price value, HT, and PC are the factors affecting Turkish bank customer intentions. Results of the cultural moderators show that collectivism and long-term/short-term orientation affect customers' UB in Pakistan while uncertainty avoidance, power distance, and masculinity/femininity moderate the UB of Turkish customers. Our findings provide new insights for developing online banking in both countries.

KEYWORDS

Online banking; UTAUT2; culture; Pakistan; Turkey

Introduction

The fast-growing development of Internet and electronic business has inspired all financial institutions and especially the banking industry to adopt online banking and encourage customers to bank on-line (Alalwan et al. 2018; Kurila, Lazuras, and Ketikidis 2016). Banking industry has been one of the fastest adopters of e-developments and rapid changes in

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technological innovations (Mahmoud 2019; Parameswar, Dhir, and Dhir 2017). Online banking can improve the financial life of citizens and ensure efficiency of banks by providing services to their customers irrespective of time and space constraints (Khan, Hameed, and Khan 2017) and can efficiently overcome issues of providing services in the rural areas without heavy investments in opening new branches (Keskar and Pandey 2018; Khan, Hameed, and Hamayun 2019). The current pandemic situation of COVID-19 has further paved the way for online banking internationally. Therefore, banks need to ensure availability of the latest technologies and innovations to keep themselves proactive in meeting customers' requirements of secure, efficient, and seamless banking services (Ling et al. 2016; Serener 2016).

The latest shift in banking sector is due to adoption of online technology to transfer and receive money electronically because customers are more conscious of the innovative ways and prefer to have a more sophisticated system for their money management (Salem, Baidoun, and Walsh 2019; Sikdar, Kumar, and Makkad 2015). Afshan and Sharif (2016) argued that business firms are intensively needful of innovations and technological changes to have a competitive edge. The last few decades have witnessed rapid and multiple applications of information and communication technology (ICT) that have helped update banking services to fulfill the customers' expectations (Dasgupta and Gupta 2019). In online banking, customers use the Internet for banking services and transactions via digital devices which include smartphones, tablets, phablets, laptops, personal computers, automated teller machines, point of sales machines, and other relevant devices that are being introduced day by day (Ahangar 2011; Hoehle, Scornavacca, and Huff 2012).

Although there have been magnificent payoffs of ICT in financial sector, doubts still linger that deter the acceptance of such technologies, especially in matters of financial transactions (Oruç and Tatar 2017; Yang et al. 2015). The doubt is more apparent across different cultures, and therefore, while analyzing internet banking diffusion, Takieddine and Sun (2015) concluded that the diffusion of online banking is lower in developing counties as compared to developed countries. They further elucidated the phenomenon by investigating why different countries have different levels of online banking adoption and finally concluded that there are socio-economic, technological, and cultural aspects that lead to low or high penetration in developing countries.

The past decade has witnessed Asian consumers flocking to digital technologies for their financial transactions. The steep upsurge in 3 G and 4 G subscribers has propelled online banking. A recent report from the Pakistan Telecommunication Authority (PTA) noted a rise of 8 million

3 G/4G subscribers during 2016. The subscriber total was 29 million in 2015, and it reached 37 million at the end of 2016 (http://www.pta.gov.pk). In terms of cultural dimensions, Pakistan represents a collectivist culture with a high level of uncertainty and more-than-average power distance, while having balanced scores on the dimensions of masculinity and long-term orientations (Hofstede 2015). A few studies in Pakistan (e.g., Abbasi et al. 2015; Hussain Chandio et al. 2013; Khan, Hameed, and Khan 2017) have added to the literature on technology and online banking acceptance in Pakistan, but a gap still exists in the literature owing to lack of integrative models (Afshan and Sharif 2016). This study aims to comprehend and evaluate the acceptance of online banking in Pakistan and compare it with customer acceptance of a moderately collectivist society (Turkey).

Celik (2008) articulated that Turkish commercial banks have been using online banking as a feasible alternative since 1997 due to an increased level of deregulation in financial sector, digital literacy, and diffusion of electronic commerce. Analyzing customers' acceptance rate of internet banking in Turkey, Coskun (2014) concluded that there is a steady growth in the adoption in terms of size and market penetration. Sayar and Wolfe (2007) found that despite the low level of sophistication and technological infrastructure, online banking of Turkey is more efficient in providing services than online banking in UK. Onar, Aktas, and Topcu (2010) examined the adoption of internet banking in Turkey through the integrated multi-criteria decision-making approach, finding that the security and reliability constructs constitute the most important factors affecting Turkish customers' intentions. By using an internet banking usage model, Daneshgadeh and Yı ldırım (2014) identified a major impact of compatibility on Turkish users of internet banking. There is a dearth of research work highlighting the impact of cultural values on technology adoption in Turkey. The few studies that investigated online banking have overlooked cultural aspects and used simplistic models to understand online banking adoption, and there is especially a wide gap in the literature comparing online banking acceptance.

Some fresh studies on online banking (Baptista and Oliveira 2016; Shaikh and Karjaluoto 2015) have focused on cross-cultural comparisons, but they missed comparing two countries with diverse cultural orientations and different level of economic development. Malaquias and Hwang (2019) stated that a worthwhile consideration in cross-country differences is understanding how technology challenges new agenda and the effect of supportive environments. In this context, the comparison of online banking in diverse cultures of Pakistan and Turkey will be truly an overriding concern, especially in the current pandemic (COVID-19) situation, where online banking has critically emerged to be a viable alternative amidst the

growing health challenges. As a general understanding, customers' behaviors are influenced by cultural orientation, which can also affect their decision-making that comes out of their perceptions (Hassan and Wood 2020).

In light of cross-cultural basis, this study is unique in three aspects. First, it uses a comprehensive UTAUT2 model to investigate customers' behavioral intentions in two different countries. Working on the suggestion of Venkatesh, Thong, and Xu (2012), this study adds perceived credibility as an external variable to enhance predictability of the model (Yuen et al. 2010) thereby incorporating customers' trust issues given the trust and privacy challenges in the digital era. Secondly, the study uses Hofstede (1980) cultural dimensions at individual customer level in both Pakistan and Turkey to know the effect of cultural characteristics on technology acceptance. The individual-level focus presents an interesting perspective since such differences are considered very crucial in adoption of technology, yet there has been only very limited investigation of them so far (Tam and Oliveira 2019). Especially, there is a dearth of research on simultaneous investigation in two diverse countries. Thirdly, there is no previous study on online banking that provides a comparative analysis of two countries having the same main religion but different cultural orientations based on Hofstede dimensions. This study will significantly contribute to the literature of online banking and help advance the understanding of online banking acceptance across different cultures.

Rest of the paper follows this pattern. Part second summarizes the most relevant literature and expounds on hypotheses developments. Section three is devoted to the methodological development explaining data collection, measures, and sampling technique. Section four demonstrate data analysis and results indicating descriptive statistics, model fit, comparative analysis, and hypotheses testing. Section five discusses the important findings of the paper while the last section concludes the paper by furnishing theoretical and practical policy implications.

Literature review and hypotheses development UTAUT2

The traditional channels of online banking are drastically shifting their frontiers to adopt new technologies that are more efficient, fast, and effective in rendering banking services. To know whether online banking is acceptable to customers, many researchers identified different factors that contribute to the adoption of online banking. Theoretically speaking, several models in information system (IS)/technology (IT) were designed and applied to unravel the leading factors, but simultaneously some limitations were found in the models that were failing to convey the whole picture (Venkatesh, Thong, and Xu 2012). In this context, the previous eight[1]

models were severely used to describe technology acceptance by various customers. Researchers' feelings of developing a more comprehensive model led to the birth of UTAUT, which is considered more comprehensive and accommodative in describing major factors that influence the adoption of any technology (Khan et al. 2018; Venkatesh et al. 2003). The previous theoretical models mainly focused on organizational perspective, which in turn, created a theoretical gap to to apply such frameworks in an individual customer context. Venkatesh, Thong, and Xu (2012) presented the extended model by adding three additional factors (price value, hedonic motivation, and habit) to the existing four identified constructs of UTAUT. The additional three constructs were added to empower the UTAUT model, thus getting a more precise prediction of online banking. Price value (PV) was added to tailor the model to individual customer context. The construct of hedonic motivation is very relevant in IS and technology acceptance context because customers expect to have enjoyment and fun as well as accomplish their specific tasks. Similarly, habit was added to express the repetitive usage of technology and the customers' addiction to certain user behaviors (Venkatesh, Thong, and Xu 2012). It has been reported that the UTAUT2 model is more comprehensive but has scarcely been tested in developing or non-Western cultures (Khan, Hameed, and Khan 2017). Several researchers have applied the extended UTAUT model to investigate users' behavioral intentions. For example, Tarhini et al. (2016) used UTAUT2 in the context of an e-learning system and empirically compared the two cultures of Qatar and the USA. Lallmahomed, Lallmahomed, and Lallmahomed (2017) investigated the adoption of e-Govt with the framework of UTAUT2 in a small island developing state and concluded that the privacy and security issues are of primary importance to reduce the resistance to change. Morosan and DeFranco (2016) used the UTAUT2 model to clarify customer behavior toward mobile payment technology (NFC-MP) in the US hotel industry and found that the model is comprehensive and representative of the relevant factors. This paper has a strength that it applies the UTAUT2 model as a theoretical lens for investigating and comparing online banking in two different countries.

Hypotheses development

Every individual user strives for better performance in individual life and organizational performance. All employees and users stive to make their performance more refined, organized, and effective. In this regard, the UTAUT model assumes that adoption of a technology or IS can achieve this target easily. Venkatesh et al. (2003) introduced the construct of performance expectancy and defined it as "the degree to which an individual

believes that using the system will help him or her to attain gains in job performance". They were inspired to use the constructs of previous technology acceptance models. Various previous constructs helped to model the PE construct, like PU (introduced by TAM, TAM2, and Combined-TAM-TPB), extrinsic motivation (by motivational model, a job-fit construct (from MPCU), relative advantage (from diffusion theory), and outcome expectations (from SCT). Venkatesh et al. (2003) and Venkatesh, Thong, and Xu (2012) found that PE is the main predictor of individual behavioral intentions in all mandatory and voluntary settings.

Past researchers confirmed that PE has an influential impact on users' behavioral intentions toward online activities (Baptista and Oliveira 2015; Zhou, Lu, and Wang 2010). In recent studies, Sharma, Singh, and Sharma (2020) and Khan, Hameed, and Khan (2017) found that PE is positively associated with the behavioral intentions of bank customers. Taking the customers' perspective, they verified that the intentions of bank customers toward online banking depend on performance expectancy. These studies used PE as the antecedent of customers' behavioral intentions in a voluntary setting. It is more likely that the customers will adopt online banking if their performance improves because of using the online system. The improvement in performance is observed through beliefs of customers toward using online system for their transactions and financial management over a long time. It is, therefore, posited:

H1: There is a positive effect of performance expectancy on customer behavioral intention to use online banking.

The UTAUT model theorizes effort expectancy (EE) to be a predictor of behavioral intention. Venkatesh et al. (2003) defined EE as "the degree of ease associated with the use of the system". The construct emerged out of the previous three constructs (PEOU from TAM/TAM2, complexity from MPCU, and EOU from IDT). EE indicates the users' expectations that the use of technology will help reduce their efforts and bring ease in their activities or jobs. The UTAUT and the extended UTAUT model (UTAUT2) (Venkatesh, Thong, and Xu 2012) validated that EE is one of the strong predictors of behavioral intention. Other studies, too, found the same results in different contexts (i.e., D.-Y. Kim and Park 2009; Martins, Oliveira, and Popovič 2014). These results point to the fact that the use of technology will upgrade performance, manage problems, and reduce the efforts of individual customers who transact virtually through the online banking system. However, some studies found an insignificant effect of EE on behavioral intention (Baptista and Oliveira 2015; Khan, Hameed, and Khan 2017). This study proposes that EE will positively influence the behavioral intentions of bank customers in Pakistan and Turkey. Therefore, it is hypothesized;

H2: Effort expectancy determines customers' behavioral intention to use online banking.

How individuals are influenced by any society is the theme of social influence (SI). The UTAUT model defines SI as "the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al. 2003). The previous constructs of subjective norm (TRA, TAM2, TBP/DTPB, and C-TAM-TPB), social factors (MPCU), and image (IDT) shaped the SI construct in UTAUT model. The UTAUT and UTAUT2 models established SI as an important antecedent of customers' behavioral intentions (Venkatesh et al. 2003; Venkatesh, Thong, and Xu 2012). People around an individual might influence that person to accept or reject any system. There are effects of the opinions of colleagues, friends, peers, superiors, relatives, coworkers, educated class, and others (like media). Several researchers have, therefore, found a positive relationship of SI with behavioral intentions (Chaouali, Yahia, and Souiden 2016; Chong, Chan, and Ooi 2012). Recently, Soh et al. (2020) found that the acceptance of online services was positively influenced by SI. In some studies, the impact has been found to be insignificant (Khan, Hameed, and Khan 2017), and this may be owing to the socio-cultural effects on individuals (Mortimer et al. 2015). This study proposes that societal influence and opinions make it more likely that bank customers in Pakistan and Turkey will choose online banking. Therefore, it is posited:

H3: Social influence (SI) determines customers' behavioral intention to use online banking.

While interacting with any system, users need to have facilities and infrastructure to better cope with their tasks. Such facilities are known as facilitating conditions (FC). Venkatesh et al. (2003) explained that FC refers to "the degree to which an individual believes that organization and infrastructure exist to support the use of the system." This definition encompasses perceived behavioral control (from TPB, DTPB, and C-TAM-TPB), FC (from MPCU), and compatibility (from IDT). FC supports that users of any system with appropriate knowledge and adequate infrastructure will do operate the system successfully. The UTAUT model theorized FC's relationship with both behavioral intentions and usage behavior (Venkatesh, Thong, and Xu 2012), and previous researchers found that FC has a positive relationship with usage behavior in multiple contexts. For example, McKenna, Tuunanen, and Gardner (2013) found the relationship in adoption of information services; Oliveira et al. (2014) found it in the adoption of mobile banking; and Tosuntaş, Karadağ, and Orhan (2015) fond it in school teachers' usage of effective whiteboard. In the context of

Pakistan and Turkey, it is posited that FC will affect the behavioral intentions of bank customers and their usage behavior. Therefore, it is hypothesized:

H4a: Facilitating conditions will directly influence customers' behavioral intention to use online banking.

H4b: Facilitating conditions will have a positive influence on customer usage behavior.

Hedonic motivation (HM) was defined by Venkatesh, Thong, and Xu (2012) as "the fun or pleasure derived from using a technology." HM was expounded as a predictor of behavioral intentions by Brown and Venkatesh (2005), and it was then validated and integrated into the UTAUT2 model. Conceptually, HM is a perceived enjoyment that was identified in previous IS literature (Thong, Hong, and Tam 2006). It was an echo of the classical motivation theory that people search for pleasure and avoid pain (Higgins 2006). The earlier approaches explained that consumers prefer technology not only to complete their tasks but also as valued entertainment. This new thesis warned IS designers to design systems characterized by playfulness, entertainment, and enjoyment (Dwivedi et al. 2016). HM appeals to the esthetic and emotional feelings of individuals to adopt any system. Recently, several authors replicated these results and found that HM does affect behavioral intentions of individual customers in context of mobile banking (Baptista and Oliveira 2015), online banking (Khan, Hameed, and Khan 2017), and near-field communication mobile payment (Morosan and DeFranco 2016). The current study assumes that customers are more likely to use online banking in Pakistan and Turkey if the online system provides some entertainment in addition to the financial transaction function. Therefore, it is posited:

H5: Customers' hedonic motivation and their behavioral intentions to use online banking are positively associated.

In an organizational setting, the employees do not bear price of services, but in the case of individual usage, the customers themselves need to pay for banking services. Price value (PV) was defined as the "consumers' cognitive trade-off between perceived benefits of the application and the monetary cost for using them" (Dodds, Monroe, and Grewal 1991; Venkatesh, Thong, and Xu 2012). PV is positive when perceived benefits of using any system are more than the costs of its service. The cost factor is significant in users' decision-making, as indicated by Chiang and Jang (2007), who found that user intentions are significantly affected by perceived price. Chan et al. (2008) concluded that the acceptance of SMS (short messaging service) is due to the low cost as compared to other internet channels in China. Various researchers in IS found a positive impact of PV on

behavioral intention of users (Arenas-Gaitan, Peral-Peral, and Ramon-Jeronimo 2015; Khan, Hameed, and Khan 2017). The current study proposes that PV will positively impact behavioral intentions of bank customers in Pakistan and Turkey. Therefore, it is hypothesized:

H6: There is a positive effect of Price value (PV) on behavioral intention to use online banking.

According to Limayem, Hirt, and Cheung (2007), habit (HT) is "the extent to which people tend to perform behavior automatically because of learning." S. S. Kim, Malhotra, and Narasimhan (2005) also highlighted the automaticity factor (habit) as a key motivator. HT was differentiated from experience as the latter is necessary but not a sufficient condition to form a habit and, secondly, the chronological time (experience) results in a different level of habits (it does not give the same level of habit) among users of the target technologies (Venkatesh, Thong, and Xu 2012). Therefore, some authors used previous behavior (prior use) as a predictor of technology acceptance among various users (I Ajzen and Fishbein 2005; Limayem, Hirt, and Cheung 2007). Venkatesh, Thong, and Xu (2012) defined HT as "the extent to which people tend to perform behavior automatically because of learning accumulated from their experience in using certain technology." Habit has been theorized to influence both behavioral intentions and usage behavior. Several authors found that HT has a positive impact on behavioral intentions (Arenas-Gaitan, Peral-Peral, and Ramon-Jeronimo 2015; Khan, Hameed, and Khan 2017), but habit's relationship to usage behavior was found insignificant in other studies (Ain, Kaur, and Waheed 2015). In the cultural context of Pakistan and Turkey, this study assumes that HT will positively impact the behavioral intentions and usage behavior of bank customers. It is, therefore, hypothesized:

H7a: Customers' habit on and their behavioral intentions to use online banking are positivley aligned to each other.

H7b: Customers' habit has also a positve association with their usage of online banking.

Internet has shifted the banking paradigm from physical to online banking, which involves no restrictions on location and time for doing financial transactions. However, for various reasons, many bank customers still hesitate to use online banking. Using the academic data of Dokuz Eylul University (Turkey), Oruç and Tatar (2017) concluded that the adoption of online banking is mostly based on communication and convenience factors. They pointed out the credibility factor for the success of online banking because bank customers are highly cautious in online transactions due to the involvement of money and personal information.

Perceived credibility (PC) is an impersonal phenomenon that depends on reputation, information, and economic perceptions of customers (Ba and Pavlou 2002). PC indicates customers' judgments that are related to the privacy and security aspects of online banking. In addition to other factors, online banking is affected by users' PC, which reflects security and privacy issues of internet banking (Wang et al. 2003). The trust and confidence of customers on online system accelerates or impedes the pace of adoption. Khan, Hameed, and Khan (2017) and Inegbedion (2018) recently found that bank customers are prone to security, credibility, and riskiness issues. Lee (2009) found a negative impact of credibility (security risk) on customers' intentions, and Bhatiasevi (2016) suggested that the PC construct is worth investigating in future studies to probe customer trust and safety issues in developing countries. Yuen et al. (2010) concluded that PC is more relevant to the adoption of internet banking services in developed countries. Previous studies reported a positive relationship between PC and behavioral intentions (Jeong and Yoon 2013; Yu 2012). The current study assumes that customers in Pakistan and Turkey will increase their behavioral intentions if enough mechanisms exist for managing their security and trust matters. It is, therefore, proposed:

H8: Perceived credibility positively impacts customer' behavioral intentions to use online banking.

Behavioral intentions (BI) serve as a bridge between exogenous variables and actual usage. BI refers to a recurrent plan or decision of users to adopt any system. BI is defined by the Committee on Communication for Behavior Change in the twenty-first century as "the subjective probability that a person will engage in a given behavior." The Theory of Planned Behavior gives a more simple explanation of BI as a "user's readiness to carry out a particular behavior" (Icek Ajzen 1991). BI is commonly employed in technology acceptance models and indicates individual acts to use a specified technology (Sezgin and Yıldırım 2016). Many studies have confirmed that BI affects the actual usage positively (Raza, Shah, and Ali 2019; Sánchez-Torres et al. 2018). Therefore, we propose that:

H9: Customers' behavioral intention determines their usage of online banking.

The moderating effect of culture and online banking adoption

Understanding culture is key to ascertain consumers' tastes and perceptions regarding online services. Culture represents a phenomenon that exhibits collective values and patterns of thinking in a social environment (Chau et al. 2002). Customer perceptions are based on collective values, whereas technology has revolutionized the traditional patterns of life and has

enormously changed customers' behavior from traditional to a more sophisticated and digitized form (Awan, Khan, and Chiang 2016). Several researchers identified that individuals and organizations are significantly affected by cultural values during technology acceptance (Park, Yang, and Lehto 2007; Straub, Keil, and Brenner 1997). Culture is a "collective programming of the mind that distinguishes the members of one group or category of people from others" (Hofstede 1980). In more simple words, culture is "the way people think, feel and act" (Hofstede, Hofstede, and Minkov 2010). Okazaki (2005) discussed the cultural perspective in M-commerce adoption and suggested more inclusive studies. Work by Srite and Karahanna (2006) persuaded researchers to investigate the cultural effect of technology acceptance. Abbasi et al. (2015) and Tam and Oliveira (2019) described studies revealing that the Hofstede model is more suitable for individual customer-level analysis while the Hall (1989) and Trompenaars and Hampden-Turner (1998) models are complex but more appropriate for country or organizational level analysis. Multiple studies have used cultural dimensions. For example, Abbasi et al. (2015) examined academics' internet acceptance behavior in a comparative study by analyzing the individualism versus collectivism (I/C) perspective. Straub, Keil, and Brenner (1997) employed the technology acceptance model to study the adoption of IS across three different cultures (US, Switzerland, and Japan). Baptista and Oliveira (2015) explored users' acceptance of mobile banking in the African region by evaluating the moderating effects of cultural dimensions. Khan, Hameed, and Khan (2017) examined adoption of online banking using two dimensions of the culture model: I/C and uncertainty avoidance.

The I/C dimension clarifies the degree of independence of any society in terms of individuality and collective thinking. "How much people feel themselves apart from other groups and how a country regards achievements of individuals or groups" is determined by I/C (Soares, Farhangmehr, and Shoham 2007). An individualistic culture is concerned with self-decisions, and therefore, customers are independent in acceptance or rejection decisions. In contrast, a collectivist culture is concerned with group cohesiveness, and therefore, people look to the collective group choices (Khan, Hameed, and Khan 2017; Zakour 2004). Baptista and Oliveira (2015) substantiated a positive moderating influence of I/C over usage behavior. According to the Hofstede calculations, the I/C index is 14% and 37% for Pakistan and Turkey, respectively (Hofstede 2015), showing that Pakistan and Turkey are collectivist societies, and the customers' views might be affected by their families, groups, and peers. In collectivist cultures, customers are more likely to rush toward online banking. This study proposes that I/C moderates the relationship between customers' BI and their usage behavior. Thus, it is hypothesized:

H10: Individualism/collectivism (I/C) will have a moderating effect on the association between customers' behavioral interntions and their usage of online banking.

Uncertainty avoidance (UA) is concerned with how people deal with unknown future events. Should people struggle to control their future or just let it happen? UA considers how people face uncertainty and ambiguity with an uncertain future (Hofstede 1980). The UA index shows the "extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these" (Hofstede, Hofstede, and Minkov 2010). In this regard, the UA Index scores for Pakistan and Turkey are 70 and 85, which shows that customers try to avoid ambiguities; this situation leads to the low level of online banking adoption. Those countries that have a high score on UA index have rigid codes of belief, have a low level of tolerance toward unorthodox behavior, resist innovation, and give more importance to security (Hofstede 2014). Investigation of the moderation effect of cultural variables by Khan, Hameed, and Khan (2017) found that UA moderates the relationship between behavioral intentions and usage behavior. The results of Mahfuz, Khanam, and Hu (2016), however, did not support the effect of UA on behavioral intentions in the context of Bangladesh. Another study, which was conducted in a collectivist African country (the Republic of Mozambique), found that UA has a significant moderating effect on customers' usage behaviors (Baptista and Oliveira 2015). The authors expect that UA will moderate the relationship between behavioral intentions and usage behavior in Pakistan and Turkey. It is, therefore, posited:

H11: Uncertainty avoidance (UA) has a moderating effect between the relationship of customes' behavioral intentions and their usage of online banking.

Power distance (PD) deals with how the less influential people accept the hierarchy and authority figures in a society or organization. All people are not at the same level, so PD measures the attitude of people toward such inequalities. PD is formally defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede 1980). The workers and people are more concerned about the opinions and voices of their bosses and superiors in a power-distanced culture, and hence they fear to disagree. The hierarchal setup exhibits inherent inequalities and centralization where the subordinates comply with the directions from the upper hierarchy. In a power-distanced society, the acceptance of mobile/online banking depends on the acceptance of superiors and bosses. The behavioral intention of customers has been found to be positively affected by PD (Mahfuz, Khanam, and Hu 2016). A low PD index (e.g., those of Austria and Denmark) represents the tendency of that society to control the

authority, power, and economic differences (Hofstede 2014). Baptista and Oliveira (2015) supported the notion that PD does moderate the adoption of mobile banking in Africa. In the cultural background of Pakistan and Turkey, it is proposed that PD will moderate the relationship between behavioral intentions and usage behavior of bank customers. Therefore, the current study hypothesizes:

H12: Power distance (PD) moderates the association of customers' behavior intention (BI) and their use of online banking.

Masculinity versus Femininity (M/F) involves ideas of how a country looks at the values of success, achievement, caring for fellow-beings, and quality of human life. A Masculine dominant (high M/F index) society is driven by higher competition, achievements, and success rate while Feminine society (low M/F index) believes in the dominance of goodwill, concern for others human beings, and quality of human life (Hofstede 1980). Here, success is measured by kindness and being "best" for society. The assertive orientation is known as "masculine," where the strong are admired, and the modest orientation labeled "feminine" is characterized by sympathy for the weak (Hofstede 2011). M/S differentiates between the "quantities" and "qualities" of life. The quality of life is thought of as a sign of success in a Feminine society (Hofstede 2014). The current study believes that M/F will moderate the relationship path of behavioral intention and customer usage behavior for online banking in Pakistan and Turkey. Therefore, it is proposed:

H13: Masculinity/femininity moderates the path of cutomers' behavior intention and their actual use of online banking.

The long-term versus short-term (L/S) orientation depicts the degree to which society attaches importance to the future perspective or short-term view. The index expresses the "time horizon." A high L/S index means that people value long-term behavior (like thrift and perseverance toward future) and a low L/S index denotes people and societies that believe in short-term stability (Yoon 2009). Pakistan has a long-term orientation score of 50, while Turkey scores 46, representing a moderate low orientation (Hofstede 2015). The current study hypothesizes that:

H14: Long/short term (LT) oriantation has a moderational role between the assocaiton of cutomers' behavior intention and their actual use of online banking.

Methodology

Data and sample characteristics

We targeted bank customers in Pakistan and Turkey as a population for this study on the rationale that both countries have the same religion but

different cultural dimensions as per the Hofstede (1980) theory. This study focuses on understanding and comparing online banking in these two countries. For this purpose, the study used a questionnaire-based survey to explore and compare the behavioral intentions and actual usage. The authors managed a focus group comprising of four professors and seven PhD scholars in management who specialize in survey design. The group recommended a few changes in the questionnaire, which were accommodated before launching the mass survey. From June to August 2017, the authors administered the survey and distributed 500 questionnaires to the bank customers (universities' students and teachers) in Islamabad[2], Pakistan and 500 to the universities' students and teachers in Ankara[3], Turkey. Students and teachers were preferred if they were bank customers and were aware of online banking. The sample was duly selected because the university students and teachers can understand well and reasonably reply to surveys; this demographic element has been used in previous such studies (Khan, Hameed, and Khan 2017; Oruç and Tatar 2017). Similarly, Sharma, Singh, and Sharma (2020) stated that university students represent a large proportion of those using network services, and they are more educated and more likely to understand the online provision of banking services.

Following Afshan and Sharif (2016), the questionnaire was administered in English as the respondents could easily understand it. The customers (students and teachers) took part voluntarily in the survey during their spare time. First, they were informed about the objectives of this research work and were ensured that the data would not be shared for any other purpose and their personal details would be kept confidential. Their response rate was increased by announcing a prize and offering to give them a copy of the results upon completion of the study.

The scale was pilot tested to check the clarity of the questionnaire, initial validity, and reliability. For this purpose, the first 50 filled questionnaires were used, and these were then removed from the ultimate sample. The respondents in the pilot study commented on the wording and design. Their suggestions were considered in creating the final version, which ensured that the survey instrument was valid, reliable (Cronbach's Alfa was greater than .70) and could be used effectively for detailed analysis.

Measures

This study relies on an adapted questionnaire to gather data to test relationships in the proposed model. The questionnaire was comprised of demographic information, questions on stated predictors, behavior intentions, and items related to cultural dimensions. All the items were adapted

from past studies that were most relevant to the study. The survey items used a seven-point Likert scale, ranging from 1 representing "strongly disagree" to 7 "strongly agree." The pioneering study of Venkatesh et al. (2003) was consulted to get the items measuring performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intention, and usage behavior. The scales for the other three constructs, i.e., hedonic motivation, habit, and price value, were adopted from the extended UTAUT2 model developed by Venkatesh, Thong, and Xu (2012). The measuring scale for perceived credibility was taken from (Amin 2009; Wang et al. 2003) and for cultural moderators from (Hofstede 1980, 2011; Karahanna, Evaristo, and Srite 2006).

Data analysis and results

To test the measures in the structural model, this study used structural equation modeling (SEM) using partial least square (PLS) estimation. PLS is a powerful tool that provides an advanced technique for solving multiple regressions. It is principally employed to effectively combine principal components analysis (CFA) and subsequent regression analysis (Hair et al. 1998). In the current research, we chose the Smart-PLS 3.0 software to conduct our estimation through PLS. In the words of Barnes (2011) and Ringle, Wende, and Will (2005), the Smart-PLS is often selected because it deals with the formative measures in a better way and is considered "as a milestone in the latent variable modeling."

Descriptive statistics

Table 1 demonstrates the major demographic information of the two samples in our research. The Pakistani sample shows that males are using internet banking more than females. On the other hand, the Turkish

Table 1. Demographic data by country.

Characteristics	Pakistani Sample ($n = 322$)		Turkish sample ($n = 405$)	
Gender	Male	187	Male	215
	Female	135	Female	190
Age	$<= 25.00$	91	$<= 25.00$	121
	$26.00 - 27.00$	74	$26.00 - 27.00$	72
	-30.00	68	-30.00	88
	31–35.00	54	31–35.00	57
	$>=36.00$	35	$>=36.00$	67
Qualification	Bachelor	152	Bachelor	131
	Master	105	Master	134
	M.Phil/MS	58	M.Phil/MS	131
	Doctorate	07	Doctorate	09
Experience	1–3	137	1–3	187
	4–6	90	4–6	109
	7–9	41	7–9	76
	$>=10$	54	$>=10$	33

Table 2. Country-specific descriptive statistics on model construct.

	Pakistan		Turkey	
Construct variables	Mean	SD	Mean	SD
Performance Expectancy	5.475	1.276	5.427	1.085
Effort Expectancy	5.166	1.375	5.663	1.179
Social influence	5.402	1.513	5.621	1.385
Facilitating conditions	5.439	1.051	5.566	1.281
Hedonic motivation	5.590	1.070	4.170	1.277
Price value	5.253	1.183	4.683	1.015
Habit	5.488	1.375	5.623	1.694
Perceived credibility	5.372	1.284	5.442	1.735
Behavioral Intentions	5.688	1.092	5.723	1.217
Use behavior	5.579	1.274	5.443	1.470
Collectivism/Individualism	5.373	1.235	5.582	0.931
Uncertainty Avoidance	4.478	1.053	5.280	1.170
Power Distance	4.283	1.325	5.322	1.230
Masculinity/Femininity	5.688	1.092	5.466	1.379
Long/Short-term orientation	5.294	1.178	5.597	1.277

sample indicates almost equal participation of males and females in terms of online banking users. Educationally, the demographics confirm that more than 50% of the participants have a master's degree. In the Pakistani sample, 72.3% of the participants were at least 30 years of age, as were 87.2% of the Turkish sample. Similarly, 57.04% of the Pakistani and around 67.7% of Turkish respondents have four years or more of experience using internet banking.

Table 2 shows descriptive characteristics of the data. All mean values were greater than the mid-point of 3.50; they were above 4.28 for the Pakistani sample ($N = 322$) and above 4.17 for Turkish sample ($N = 405$). These findings indicate that majority of our respondents expressed generally positive answers to the constructs used in this research model. Table 2 also shows that the standard deviations ranged from 1.05 to 1.51 for the Pakistani sample, and from 0.93 to 1.73 for the Turkish sample.

Common method bias

Common method bias (CMB) might occur when all the data are perceptual and are acquired from one source and at a single point of time. Here the variations in customers' responses arise due to the instrument rather than the actual responses. CMB might threaten "the credibility of conclusions about the relationship among measures" (Podsakoff et al. 2003, 879). To check for the presence of CMB in the data, Harman's single factor test was performed. We found that all items can be categorized into fifteen factors, and the first factor explained only 26.7% of the total variance. Therefore, the result proves the absence of any CMB issue in this work.

Measurement model

The assessment of convergent validity was accomplished through evaluating the values of factor loadings, alpha reliability, composite reliability (CR), and average variance extracted (AVE). The study examined the measurement model through confirmatory factor analysis (CFA), and the validity of the variables was tested using content, convergent, and discriminant validity (Hair et al. 1998). In Table 3, we see that all the factor loadings are greater than 0.60 except for three items: (SI4) from social influence, (PC4) from perceived credibility and (MF4) from Masculinity/Femininity; these three were eliminated due to low factor loadings (Pallant 2007).

Moreover, we examined the CR and AVE for each variable to assess the reliability and validity issues. The recommended cutoff levels for CR and AVE are respectively 0.70 and 0.50 (Fornell and Larcker 1981). The results in Tables 4–5 illustrate that the CR values are greater than 0.70, and the AVE results of all variables are greater than 0.50 for the Pakistani, Turkish, and pooled datasets. Thus, the results verify that the convergent validity is sound. Discriminant validity testifies to whether measures of each variable differ from the other variables. To evaluate the discriminant validity, the study followed two approaches highlighted by (Gefen and Straub 2005). First, as per the recently published literature, the authors tested "the items in the item loadings and cross-loadings to construct the correlations" (Liu et al. 2016). Our results indicated that all the item loadings of the corresponding variables are above their cross loading values of the other latent variables, thus showing acceptable discriminant validity. Second, the discriminant validity of all constructs was examined using the square root of AVE. Fornell and Larcker (1981) suggest that the AVE square root for all constructs should be greater than the correlation between all variables. The results in Tables 4–5 show that the AVE square roots are greater than the correlations between variables, demonstrating a sound discriminant validity.

To check for a multicollinearity issue, the researchers examined the issue of multicollinearity between independent constructs through both the tolerance value and the variance inflation factors (VIF). According to Mason and Perreault Jr (1991), when VIFs are below 10 or when tolerance values are above 0.1, multicollinearity will not be an issue. Our results show that the VIF values range from 1.66 to 2.64 for the Pakistani sample, 1.04 to 2.13 for the Turkish sample, and 1.02 to 2.41 for the pooled data set. Thus, the findings indicate that multicollinearity is not a serious issue in this research.

Structural model and hypotheses testing

After assessing the content, convergent, content, and discriminant validity of the structural model, the authors tested the structural model

Table 3. Factor loading values for all construct variables.

Constructs	Items	Pooled sample	Pakistan sample	Turkey sample
Performance Expectancy (PE)	PE1	0.714	0.752	0.696
	PE2	0.833	0.803	0.850
	PE3	0.776	0.774	0.775
	PE4	0.698	0.631	0.745
Effort Expectancy (EE)	EE1	0.718	0.649	0.748
	EE2	0.742	0.633	0.791
	EE3	0.792	0.821	0.789
	EE4	0.738	0.828	0.683
Social Influence (SI)	SI1	0.774	0.710	0.827
	SI2	0.721	0.834	0.737
	SI3	0.815	0.794	0.764
Facilitating conditions (FC)	FC1	0.780	0.745	0.806
	FC2	0.843	0.859	0.829
	FC3	0.790	0.766	0.811
Hedonic motivation (HM)	HM1	0.818	0.800	0.767
	HM2	0.823	0.766	0.715
	HM3	0.817	0.863	0.808
Habit (HT)	HT1	0.786	0.812	0.756
	HT 2	0.738	0.762	0.746
	HT 3	0.803	0.772	0.829
	HT 4	0.815	0.758	0.860
Price Valve (PV)	PV1	0.713	0.879	0.655
	PV2	0.846	0.794	0.846
	PV2	0.753	0.789	0.765
Perceived Credibility	PC2	0.774	0.789	0.826
(PC)	PC3	0.713	0.741	0.761
	PC3	0.782	0.684	0.698
Behavioral	BI1	0.880	0.877	0.878
Intention (BI)	BI2	0.918	0.915	0.922
	BI3	0.878	0.875	0.880
Individualistic/collectivistic	I/C1	0.753	0.790	0.668
(I/C)	I/C2	0.730	0.749	0.662
	I/C3	0.792	0.768	0.790
	I/C4	0.743	0.736	0.817
Uncertainty Avoidance	UA1	0.687	0.661	0.640
(UA)	UA2	0.759	0.769	0.759
	UA3	0.717	0.752	0.735
	UA4	0.723	0.696	0.742
Power distance (PD)	PD1	0.854	0.879	0.831
	PD2	0.807	0.830	0.790
	PD3	0.705	0.728	0.784
Long/short term	L/S1	0.814	0.764	0.772
(L/S)	L/S2	0.731	0.756	0.665
	L/S3	0.774	0.698	0.812
	L/S4	0.783	0.718	0.648
Masculinity/Femininity	M/F1	0.768	0.746	0.774
(M/F)	M/F2	0.774	0.809	0.720
	M/F3	0.728	0.631	0.732
Usage Behavior	UB1	0.726	0.730	0.717
(UB)	UB2	0.686	0.679	0.717
	UB3	0.764	0.762	0.784
	UB4	0.698	0.689	0.747

(hypothesized relationships) by examining the standardized paths in the model. The bootstrap resampling method was employed to know the path significance levels (Henseler, Ringle, and Sinkovics 2009), using 2000 iterations of resampling (Chin 1998).

Table 7 exhibits the results of the Smart-PLS analysis on the Pakistani, Turkish, and pooled datasets. For the Pakistani sample, the findings show

Table 4. Reliability, convergent and discriminant validity, and correlation matrix ($N_{Pakistan}$=322).

Factors	CR	AVE	BI	EE	FC	HT	HM	IC	LT	MF	UB	PC	PD	PE	PV	SI	UA
BI	0.91	0.79	0.88														
EE	0.82	0.54	0.41	0.73													
FC	0.83	0.62	0.61	0.41	0.79												
HT	0.85	0.60	0.54	0.53	0.57	0.77											
HM	0.85	0.65	0.53	0.40	0.45	0.47	0.81										
IC	0.84	0.57	0.26	0.54	0.27	0.28	0.25	0.76									
LT	0.82	0.53	0.36	0.53	0.31	0.38	0.31	0.79	0.73								
MF	0.77	0.53	0.47	0.42	0.61	0.58	0.39	0.39	0.47	0.73							
UB	0.80	0.51	0.37	0.49	0.31	0.38	0.30	0.72	0.95	0.46	0.71						
PC	0.78	0.54	0.65	0.74	0.53	0.60	0.56	0.41	0.51	0.45	0.48	0.73					
PD	0.85	0.66	0.07	0.03	−0.03	0.06	−0.13	−0.02	0.03	0.01	0.08	0.08	0.81				
PE	0.83	0.55	0.52	0.58	0.47	0.58	0.34	0.40	0.50	0.54	0.55	0.50	0.08	0.74			
PV	0.86	0.67	0.12	0.07	0.10	0.12	0.05	0.08	0.11	0.10	0.10	0.10	0.01	0.09	0.82		
SI	0.82	0.61	0.51	0.33	0.76	0.47	0.52	0.21	0.28	0.43	0.27	0.53	−0.06	0.30	0.01	0.78	
UA	0.81	0.52	0.49	0.54	0.41	0.53	0.23	0.36	0.52	0.44	0.56	0.51	0.28	0.82	0.07	0.28	0.72

Note. CR: Composite Reliability; AVE: Average Variance Extracted; Values indicating square roots of AVEs are bolded and listed diagonally in the matrix; BI: Behavioral Intentions; EE: Efforts expectancy; FC:Facilitating conditions; HT: Habit; HM:Hedonic motivation; I/C: Individualism/collectivism; LT: long term/short term; MF: Masculinity/Femininity; UB: usage behavior; PC: perceived credibility; PD: power distance; PE: Performance Expectancy; PV: price value; SI: social influence; UA: uncertainty avoidance

Table 5. Validity and correlation matrix (N_{Turkey}=405).

Factors	CR	AVE	BI	EE	FC	HT	HM	IC	LT	MF	UB	PC	PD	PE	PV	SI	UA
BI	0.922	0.798	**0.893**														
EE	0.840	0.569	0.487	**0.754**													
FC	0.856	0.665	0.494	0.616	**0.816**												
HT	0.876	0.639	0.648	0.494	0.388	**0.799**											
HM	0.842	0.572	0.111	0.045	0.101	−0.091	**0.756**										
IC	0.825	0.544	0.290	0.573	0.418	0.271	−0.026	**0.738**									
LT	0.817	0.530	0.091	0.134	0.106	0.048	−0.013	0.040	**0.728**								
MF	0.790	0.559	0.352	0.482	0.564	0.301	0.068	0.740	0.055	**0.748**							
UB	0.784	0.548	0.632	0.811	0.534	0.568	0.086	0.513	0.124	0.395	**0.760**						
PC	0.810	0.581	0.342	0.411	0.310	0.244	−0.003	0.507	0.065	0.514	0.299	**0.721**					
PD	0.844	0.643	0.088	0.137	0.126	−0.027	0.148	0.059	0.532	0.055	0.142	0.139	**0.802**				
PE	0.852	0.591	0.668	0.506	0.500	0.499	0.004	0.314	0.061	0.342	0.556	0.298	0.011	**0.769**			
PV	0.802	0.580	0.331	0.276	0.387	0.296	0.011	0.472	0.043	0.542	0.254	0.396	0.039	0.321	**0.761**		
SI	0.857	0.600	0.438	0.474	0.444	0.424	0.098	0.258	0.139	0.308	0.472	0.227	0.109	0.427	0.433	**0.775**	
UA	0.831	0.549	0.491	0.650	0.850	0.310	0.291	0.369	0.149	0.478	0.552	0.380	0.232	0.453	0.364	0.471	**0.740**

Note. CR: Composite Reliability; AVE: Average Variance Extracted, Values indicating square roots of AVEs are bolded and listed diagonally in the matrix.

that the model explains 59.1% of the variance in BI and 38.4% in UB. The results in Table 7 establish that PE, HM, HT, and PC significantly influence BI toward online banking acceptance in Pakistan, confirming hypotheses H1, H5, H7, and H8. The effect of EE, SI, FC, and PV on BI was not significant, so hypotheses H2, H3 H4a, and H6 were not supported. Our results show that FC, HT, and BI have significant positive effects on UB, therefore confirming hypotheses H4b, H7b, and H9. For the Turkish sample, the results of the statistical analysis showed that the model explains 62.0% of the variance in BI and 26.7% in user behavior. The results for Turkish customers show that PE, SI, HM, HT, and PC are positively and significantly related to BI; hence, hypotheses H1, H3, H5, H7a, and H8 were supported. Contrarily, no significant effect was found of EE, FC, and PV on BI; thus, hypotheses H2, H4a, and H6 were not supported. Our findings also show that FC, HT, and BI are positively and significantly related to user behavior, supporting hypotheses H4b, H7b, and H9. The results of our pooled data show that the model explains 53.8% of the variance in BI and 53.1% in UB. The findings of pooled data in Table 7 indicate that PE, SI, HM, HT, PV, and PC are positively related to BI, confirming hypotheses H1, H3, H5, H6, H7a, and H8. The results further reflect that EE and FC are not significantly related to BI, rejecting hypotheses H2 and H4a. Moreover, the results of pooled data explain that FC, HT, and BI have significant effects on UB; thus, hypotheses H4b, H6b, and H9 were supported.

Moderating effects

Hypotheses H10 to H14 theorize the moderating effects of cultural dimensions (Individualistic/collectivistic, uncertainty avoidance, power distance, masculinity/femininity and long term/short term orientation) between behavioral intention and usage behavior. Results in Table 8 indicate that the interaction terms (UA × BI, PD × BI and LT × BI) have significant effects on usage behavior of Pakistani customers, supporting hypothesis H11, H12, and H14. The Table 8 results indicate that uncertainty avoidance, power distance, and long-term orientation significantly moderate the usage behavior of Pakistani customers, supporting hypotheses H11, H12, and H14. The data from Pakistan does not support the moderating effects of I/C and M/F on user behavior; thus, hypotheses H10 and H13 were rejected. For the Turkish sample, we found significant moderating effects of I/C and M/F on user behavior, supporting hypotheses H10 and H13. Furthermore, the data does not indicate significant moderating effects of UA, PD, and L/S orientation on use behavior. Therefore, the results do not support hypotheses H11, H12, and H14.

Table 6. Reliability, convergent and discriminant validity, and correlation matrix ($N_{Pool} = 727$).

Factors	CR	AVE	BI	EE	FC	HM	HT	OD	PC	PE	PV	SI
BI	0.921	0.796	**0.892**									
EE	0.835	0.559	0.451	**0.748**								
FC	0.847	0.648	0.552	0.521	**0.805**							
HM	0.859	0.671	0.402	0.393	0.550	**0.819**						
HT	0.866	0.617	0.589	0.517	0.466	0.351	**0.786**					
UB	0.788	0.554	0.531	0.571	0.385	0.296	0.495	**0.744**				
PC	0.849	0.653	0.539	0.466	0.648	0.389	0.484	0.424	**0.808**			
PE	0.842	0.573	0.605	0.535	0.478	0.316	0.530	0.679	0.445	**0.757**		
PV	0.822	0.607	0.153	0.177	0.216	0.325	0.137	0.153	0.244	0.148	**0.779**	
SI	0.833	0.626	0.102	0.049	0.115	0.112	−0.013	0.035	0.094	0.023	0.059	**0.791**

Note. CR: Composite Reliability; AVE: Average Variance Extracted, Values indicating square roots of AVEs are bolded and listed diagonally in the matrix.

Table 7. Model path coefficient values for three samples.

Hypotheses	Pakistan ($n = 322$) Path (t-value)	Turkey ($n = 405$) Path (t-value)	Pooled ($n = 728$), Path (t-value)
PE——>BI	0.235	0.394	0.319
	(5.210)***	(9.029)***	(8.479)***
EE——>BI	.072	−0.016	−0.040
	(1.889)^{ns}	(0.274)^{ns}	(1.054)^{ns}
SI——>BI	−0.085	0.114	0.081
	(1.273)^{ns}	(2.264)**	(2.162)*
FC——>BI	0.082	0.015	0.078
	(1.878)^{ns}	(0.263)^{ns}	(1.946)^{ns}
HM——>BI	0.153	0.132	0.108
	(4.054)***	(3.544)***	(2.824)*
PV——>BI	0.040	0.034	0.125
	(1.396)^{ns}	(0.916)^{ns}	(2.424)**
HT——>BI	0.112	0.405	0.272
	(2.284)*	(10.690)***	(7.719)***
PC——>BI	0.423	0.156	0.159
	(6.530)***	(2.541)**	(4.174)***
FC——>UB	0.323	0.114	0.144
	(3.605)**	(2.528)*	(3.308)***
HT——>UB	0.172	0.266	0.203
	(3.372)***	(6.191)***	(6.539)***
BI——>UB	0.164	.272	0.333
	(2.873)**	(4.846)***	(7.766)***

Discussion and conclusion

This study aimed to predict and compare the adoption of online banking in Pakistan and Turkey. The theoretical foundation of UTAUT2 was used with an additional variable, perceived credibility, to represent the customers' safety and security concerns. Furthermore, borrowing from Hofstede (1980), the five cultural moderators were used to apprehend the cultural impacts on customers of both countries. The model explains 59.1% of the variance in BI and 38.4% in UB for Pakistan and 62.0% of the variance in BI and 26.7% in UB for Turkey. The result of structural equation modeling shows that performance expectancy is a significant factor affecting the BI of Pakistani as well as Turkish customers. The result is in line with earlier studies of (Bhatiasevi 2016; Gao and Deng 2012), reflecting that bank

Table 8. Moderating effects for the cultural dimensions.

	Pakistan Sample ($n = 322$)			Turkey Sample ($n = 405$)		
Interaction	Path coefficient	t	p	Path coefficient	t	p
Individualism* BI——>UB	0.001	1.032	0.310	−0.113	3.12	0.014
Uncertainty Avoidance* BI——>UB	−0.084	2.639	0.013	−0.025	0.906	0.372
Power Distance* BI——>UB	−0.080	2.526	0.017	0.009	0.299	0.767
Masculinity* BI——>UB	−0.029	1.210	0.236	0.960	2.500	0.018
Long-Term Orientation* BI——>UB	0.102	2.950	0.008	0.032	1.012	0.320

customers in both countries adopt the system to enhance their performance. The result indicates that management should develop a positive perception of the useful operation of the system and enrich the online banking channel with sufficient information.

The analysis found that effort expectancy has no significant effect on bank customers in Pakistan and Turkey. The result disapproves one of our hypotheses (H2) and differs from some previous studies (Venkatesh et al. 2003; Venkatesh, Thong, and Xu 2012), but is consistent with other results (Baptista and Oliveira 2015; Herrero, San Martín, and Garcia-De los Salmones 2017). One of the reasons may be the orientation of customers who like short-term ease instead of long-term effort reduction (EE). Some customers may sacrifice ease on taking other perceived banefits like efforts expectancy and enjoyment.

Social influence is a significant predictor in the Turkish sample but is not effective in the context of Pakistan. This result may be due to digital literacy or the greater prominence of online banking in Turkey. Social media also plays a role in developing customers' opinions (Lu et al. 2017), and social media is more stable in Turkey. The increasing trend of individualism in Pakistan, where customers feel independent from others, may result in the EE being insignificant for Pakistan (Khan, Hameed, and Khan 2017).

The study further finds that facilitating conditions have an insignificant relationship with BI, confirming the results of Afshan and Sharif (2016). The result is not in accordance with other established studies, but we believe it stems from unique characteristics of our data. On the other hand, FC affects the UB directly in Pakistan and Turkey, highlighting the importance of infrastructural facilities for going online in banking services. The respective governments can influence the customers' usage by increasing digital connectivity, digital literacy, infrastructure, and legal support to enhance the adoption of online banking.

Similarly, in contrast to the previous studies of (Venkatesh, Thong, and Xu 2012), the price value was not found to be a significant predictor of behavioral intentions. When customers know that the technology is updating their performance, providing pleasure, and becomes a spontaneous job, they may disregard the price factors. Our result agrees with the finding of

Arenas-Gaitan, Peral-Peral, and Ramon-Jeronimo (2015). The study also finds that hedonic motivation has a significant effect on customers' intentions in both Pakistan and Turkey. Besides mere transacting on the online banking channel, the customers also like some entertainment to immerse them more in the system. This intrinsic motivation can be achieved by providing some sort of fun to the customers of online banking, such as games, music, or other videos. The web designers for online banking can presumably think of ways to reduce the customers' monotony by addnig something intriguing and interesting for the users.

Habit is one of the significant predictors of BI and UB in Pakistan and Turkey, representing that the customers accept any system once they use it habitually. The result for HT is highly significant for Turkish customers. The result also depicts that HT influences UB directly without the mediation of BI. If customers are educated and trained, they might reach the point where using online banking becomes a routine activity and experience of their lives (Trivedi 2019). In this way, the customers will develop their habit and will be more likely to use the system regularly. Perceived credibility predicts BI significantly, showing that bank customers in Pakistan and Turkey are highly cautious about the security aspect of their online transactions. This result establishes the findings of (Agha and Saeed 2015; Bhatiasevi 2016). Similarly, confirming previous studies (Khan, Hameed, and Khan 2017; Venkatesh, Thong, and Xu 2012), it was found that BI positively influences the actual usage of bank customers in both Pakistan and Turkey. Once customers form their intentions, those intentions lead to the actual usage.

The study judged the impact of cultural dimensions on bank customers in Pakistan and Turkey. Many studies have highlighted the need to include dimensions to envisage the customers' cultural aspects that affect the acceptance of online technology (Abbasi et al. 2015; Baptista and Oliveira 2015; Khan, Hameed, and Khan 2017). To this end, the study used the Hofstede cultural variables as moderators between BI and customers' adoption of online banking. The result of moderation (I/C*BI→UB) shows that individualism/collectivism moderates the UB of Turkish customers (H10), confirming the empirical evidence of Abbasi et al. (2015). Even though Turkish society is more individualistic than Pakistani society (Hofstede 2015), the result favors the moderation for the Turkish sample. The results showed that uncertainty avoidance (AU*BI→UB) moderates the relationship between BI and UB for Pakistan. The UA score is 70 and 85 for Pakistan and Turkey, respectively, but the findings were only significant for the Pakistani sample. The reason may be the combination of high UA and high PD, as suggested by (Yuen et al. 2010). Similarly, power distance significantly moderates the relationship between behavioral intentions and

usage behavior in Pakistan. The moderation highlights the fact that the decision of customers is affected by the hierarchal setup in Pakistan, providing food for regulators' thoughts. Moreover, the moderately high score of PD (i.e., 55) in Pakistan dictates that authority and power should be kept at controlled levels. The fourth dimension, masculinity/femininity, does moderate the UB for Turkish customers. The low score of M/F for Turkey (i.e., 45) represents the quality of cooperation and modesty in Turkish customers. The phenomenon indicates the attributes of masculinity and pragmatism in Turkish culture. The long-term/long term orientation also influences the customers' actual usage in Pakistan. Because the L/S score is half (i.e., 50), it might help bank management to understand the dynamics of time horizons and thus increase online banking.

Implications of the study

Following the notion that technology acceptance models work in diverse cultures, this study chose a comprehensive OB model to investigate the Pakistani and Turkish cultures. The research adds to the extant literature in multiple ways and elucidates some insightful suggestions for theoretical and practical help. Despite the fact that both Pakistan and Turkey have an established online banking network that provides digital services to the populace, there are many challenges to going online. Banks and regulators should focus on the development of products that can gain active customer participation. The banks can invest in raising the customers' readiness in several ways, keeping in view the main findings of the study.

Theoretical implications

The study attempted to determine and compare the online banking acceptance in Pakistan and Turkey by using the UTAUT2 model. This analysis provides further evidence of the validity of UTAUT through a comparative study. The model was augmented with perceived credibility as an additional variable to account for the customers' security concerns. This will theoretically add to the UTAUT studies and will enrich the understanding of online banking in cross-cultural research. The cultural model of Hofstede (1980) has been used by many studies (Baptista and Oliveira 2015) but the previous studies used the mean differences without measuring the cultural dimensions (Alsajjan and Dennis 2010; Karahanna, Evaristo, and Srite 2006; Straub, Keil, and Brenner 1997). The use of Hofstede's culture model provides insights into how customers accept or reject any technology because of cultural aspects. In contrast to previous studies where culture theory was used in national or organizational settings, this study uses and promotes the cultural theory on the individual level of analysis. The

extended UTAUT constructs with cultural moderators could be a richer reference for further studies. The current study contributes to the online banking studies, technology acceptance studies, and cross-cultural studies by enhancing the theoretical base for future researchers and academicians.

Practical implications

The study provides rich implications to regulators, bank management, and other stakeholders by highlighting significant factors that could be focused upon to enhance online banking channels in both Pakistan and Turkey. The findings suggest that bank management should provide facilitation to the populace instead of merely focusing on technology. Customers strive to improve their financial performance, which can be facilitated through upgraded online banking. Facilitating conditions, an action that has a positive association with usage behavior, reflects the goal of increasing digital devices and connectivity. The customers' focus is indispensable to develop online banking with a concentration on the technical and educational aspects.

The findings also signify the value of hedonic motivation, dictating that software designers, bankers, and regulators enrich their online channels with fun and pleasurable aspects. To this end, banks could add some intriguing music, games, or other information bundles to their online technology to attract more customers and maintain their customer base. The significance of habit can be materialized if customers are attracted to the initial usage. This can be accomplished through social influence, education, or advertising techniques to foster the initial adoption of online channels for transactions.

This study showed that customers hesitate to adopt online banking because of credibility issues. Banks have to use the most reliable technology, with professional verification checks, to ensure the security and privacy of their customers' accounts. In this regard, well-educated, well-trained, and professional employees should be hired, thus minimizing the chances of hacking or other types of theft. State of the art technology, bearing the latest techniques of cryptography and steganography, can fulfill this genuine need of the hour. Some banks generate their own security system with strong virtual walls, using techniques such as dynamic codes or fingerprints for verification. As found by Ho, See-To, and Chiu (2020) in the context of E-payment, All such measures can increase customers' perception of credibility in online banking. In setting the regulatory environment, the role of SBP is crucial to ensure bank customers that their rights and benefits will be fully safeguarded.

The study also concentrated on the individuals' cultural aspects in Pakistani and Turkish society; these aspects can help in successful planning and implementation. Collectivism has a positive impact on behavioral intentions over usage behavior in Turkey, indicating that people can be motivated to use online banking through encouragement from the

community. Turkey is a moderately collectivist society that is characterized by loyalty to group members and where most of the relations are like family (overriding rules and regulations) (Hofstede 2015). The group pressures and congregational activities can have a profound effect on accelerating the adoption of online banking, as also concluded by Khan, Hameed, and Khan (2017). One of the primary factors in the collectivist culture of Turkey is its main religion (Islam), in that religious scholars have an impact on the local populace. This platform, if used by the local bank management, can favor online banking proliferation. Group training and the pressure of colleagues and peers have a deep impact in a collectivist society, so these can be used for making online banking appear as a viable alternative for the customers.

Uncertainty avoidance moderates usage behavior in Pakistan. In this context, the customers in Pakistan follow rigid codes of attitude and behavior; people are emotional and hardworking, but at the same time, may resist innovation (Hofstede 2015). Understanding such characteristics may help practitioners and managers to accelerate the pace of online banking adoption by devising their strategies accordingly. Similarly, the power distance and long-term orientation may be considered while devising a strategy for promoting online banking in Pakistan. Turkish customers are mainly femininity-oriented and are modest. Knowing the key characteristics and their real-time implications can help increase the use of online banking.

Limitations and future research directions

The authors acknowledge several constraints that limit the generalizability of the study. The first is the use of convenience sampling; the data were obtained from the capital city of Pakistan and the capital city of Turkey, and using such locations may restrict the generalizability of the findings to other cities. Secondly, the study investigated and compared the online banking situation in Pakistan and Turkey, which confines the wider application of the results, as the study results might differ in contexts with a different level of development. Care must be taken while employing the results to other countries and contexts. Thirdly, the study only examined the given factors, thus missing other factors that might contribute to the acceptance intentions. Future researchers could investigate other factors like government support, digital know-how, and psychological factors. The fourth limitation is the use of students and teachers in the sample, which limits the wider application to other demographic portions of societies. Although student and teacher samples have been used in several recent studies, a need remains to take a holistic approach by including other customers as well. Fourth, the study used a cross-sectional design to obtain

the customers' responses, but it is worthwhile to apply a longitudinal approach in future studies and compare the development in the adoption. Fifth, Hofstede's model is considered credible among researchers, yet the cultural values can significantly differ between countries or even within a country. Thus using the single score criterion for any country overlooks the regional differences within one country. Thus, future studies can consider more aspects of culture like the customers' willingness to share or religiosity to understand the cultural impacts on online banking acceptance with more precision.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes

1. Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Combined TAM-TPB, Model of PC Utilization (M-PCU), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT).
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