Article

Determinants of Behavioral Intentions to Use Islamic Financial Technology: An Empirical Assessment

Mohammad Shahfaraz Khan [1] [ID], Mustafa Raza Rabbani [2,*] [ID], Iqbal Thonse Hawaldar [3] [ID] and Abu Bashar [4] [ID]

[1] Department of Business Administration, University of Technology and Applied Sciences-Salalah, Salalah 215, Oman; dr.mskhan.sal@cas.edu.om
[2] Department of Economics and Finance, College of Business Administration, University of Bahrain, Zallaq P.O. Box 32038, Bahrain
[3] Department of Finance and Accounting, College of Business Administration, Kingdom University, Riffa P.O. Box 40434, Bahrain; i.hawaldar@ku.edu.bh
[4] School of Management, IMS Unison University, Dehradun 248009, India; abu.bashar03@iuu.ac
* Correspondence: mrabbani@uob.edu.bh; Tel.: +973-33787976

Abstract: This study examines the antecedents/determinants of behavioral intentions toward the utilization of Islamic financial technology for Middle Eastern customers. The study applied structural equation modeling (PLS-SEM). After robust research efforts were invested in the identification of factors, they and were converted into measures, and the results were analyzed. The results demonstrate that the independent variables shown in the UTAUT model have a significant impact on the behavior to adopt Islamic financial technology, which implies that the people are ready to use Islamic financial technology while making online transactions. The work in this study adds to the knowledge regarding the factors affecting behavioral intention to use Islamic fintech, as there is scarcity of studies in this domain, especially in the context of Middle Eastern online customers. Moreover, this study also considers the major categories of online payments.

Keywords: structural equation modeling; partial least square method; regression; Islamic financial technology; UTAUT model; empirical assessment

1. Introduction

The field of Islamic finance is growing and gaining interest globally, irrespective of Islam followers, and it is appreciated even by non-Muslims. Islamic finance is the form of finance which uses sharia principles of ethics and morality at its core in its financial dealing (Dharani et al. 2022; Rabbani et al. 2021b; Naeem et al. 2021). There was always a possibility that financial technology could contribute significantly to the development of Islamic finance (Banna et al. 2021b). In recent times, the technology has become an inseparable part of life, and it is impossible to imagine life without technology (Banna et al. 2021c). The information and communications technology in transforming the economic and social environment in many developing countries and fintech has a significant role to play in reshaping the global finance world (Abbasi et al. 2021).

Many researchers have defined financial technology as a tool of digital technology used for performing financial activities (Saksonova and Kuzmina-Merlino 2017; Mohamed and Ali 2018). Financial technology plays a significant part by filling in as a trusted financial middleman facilitating financial transactions for people and helping them in their daily activities globally, which has totally transformed initiates into a new era in the financial services market and proves to be an effective tool for banks and other financial institutions (Chinnasamy et al. 2021; Nguyen et al. 2021; Baber 2020a). Financial technologies and its tools have transformed the ways of performing financial activities (Todorof 2018). The rising investment in the field of financial technologies globally is a strong and reliable indicator of the growth in financial technologies. In this regard, the statistics published

show that the transaction value will reach USD 8,971,956 million by 2022, at a growth rate of 17% per annum (Standard 2021).

Islamic fintech is defined in the same way as its conventional counterparts, with a difference of sharia compliance (Rabbani et al. 2020; Chong 2021). It is a combination of two words, Islamic + fintech. While the former refers to sharia compliance of financial transactions, the latter refers to the use of technology in the delivery of financial services. If any transaction performed under Islamic finance uses technology without complying to sharia principles, then it is considered as *Haram* or invalid (Lajis 2019; Hassan et al. 2020). Islamic finance has already embraced fintech based on technological advancements such as blockchain (Karim et al. 2022), artificial intelligence (Khan et al. 2021), cryptocurrency (Khan and Rabbani 2020); Regtech (Rabbani et al. 2021b), crowdfunding and P2P lending (Nor et al. 2021; Ascarya 2021). Briefly, fintech is about performing financial transactions with the use of disruptive, innovative and pioneering technology, whereas Islamic fintech is about doing all that within the sharia universe (Karim et al. 2022; Khan et al. 2021). Since Islamic finance is already a growing market and Muslims around the globe are looking for sharia-compliant financial solutions (Khan and Rabbani 2020; Rabbani et al. 2021a), fintech can help the Islamic finance industry in further growth by increasing accessibility, efficiency and transparency (Banna et al. 2021a).

The increasing use and growth of technology around financial services can be attributed to many reasons such as reducing opportunity cost and encouraging higher customer satisfaction, which results in increased bank efficiency, as people can use financial services anytime and anywhere with only a click of a button if they are connected to the internet (Rabbani 2022; Tajudin et al. 2020). Islamic fintech is critical to digital delivery of Islamic financial services to customers to fulfill the Islamic finance objectives of financial inclusion, social justice, and equal distribution of wealth within a society (Baber 2020a). Islamic social finance services such as *Zakat*, *Qardh-Al-Hasan*, and *Islamic microfinance* can be delivered using artificial intelligence and blockchain technology to achieve this objective (Atif et al. 2021; Rabbani 2021; Khan et al. 2021).

There is much research such as (Yan et al. 2021; Ashta and Biot-Paquerot 2018; Lee and Shin 2018; Hu et al. 2019; Mazambani and Mutambara 2020; Ahmed et al. 2020; Fu and Mishra 2022) that emphasizes the merits of financial technology. As they explain in their studies, financial technology helps to increase transparency, accessibility, and flexibility, and it is less risky and improves shareholders earnings. Second, the growth in financial technology can also be attributed to the fact that many people are connected to mobile internet services. In this regard, global systems for mobile communication associations have predicted that by 2025 mobile internet users will be more than 5 billion. All these factors imply that the financial technology market will expand widely and quickly in the next few years (Hendratmi et al. 2019; Chinnasamy et al. 2021; Baber 2020a).

Based on several arguments and explanations, it can be safely concluded that Dubai has great potential to improve its economic growth by facilitating the role of financial technology. Although best efforts have been placed in reviewing the literature, it can be understood that many previous studies have focused on different variables such as consumer behavior, some of which observe consumer intention while studying intentions to use Islamic financial technology, especially in the Middle East.

Although financial technology has also attracted shareholders, the long-term use of financial technology still has doubts. Much research is doubtful due to unexpected and considerable risks that hinder the facilitation of financial technology. Therefore, the present study uses TAM and UTAUT1 (Buckley and Webster 2016). These theories have been used while investigating customer intentions.

The remainder of the paper is structured as follows: the literature review section presents the relevant theories used in this paper. In the next section, the conceptual framework is presented, and a hypothesis was developed. Further, in the research methodology section, the research methods and variables are discussed. In the data analysis section, empirical results of this study are presented and discussed and in the last section of the

study, which summarizes and highlights the main findings and contributions of this study to the existing body of knowledge.

2. Review of the Literature and Hypothesis Development

2.1. Theory of Planned Behavior (TPB)

The intention to use any technology was researched in light of the theory of planned behavior. The theory of planned behavior is popular, as it is an efficient model to clarify intentions and predict behavioral intentions for using any technology (Hu et al. 2019). The theory of planned behavior is also an extension model from the theory of reasoned action (Mittelman and Rojas-Méndez 2018). The theory of planned behavior advocates that the tendency of people performing certain activities increases if they find that that behavior will yield the intended results or if they believe that some valued person wants them to behave in a certain way or if they assume that they have ample resources and opportunities to indulge in such kinds of behavior (Zaremohzzabieh et al. 2019; Bhatti and Md Husin 2019).

2.2. Technology Acceptance Models

The technology acceptance model was initially introduced by Davis (1986) and has been constantly revised and upgraded to the technology acceptance model (TAM) 2 (Venkatesh and Davis 2000) and then TAM3 (Venkatesh and Bala 2008).

The technology acceptance model (TAM) is an important model to produce system use (Maranguni and Grani 2015; Chau 1996). Many researchers have suggested that TAM can be combined with other theories and models, and they believe that the technology acceptance model is an important and effective model in determining the use of growing technology within an organization. Janah et al. (2020) suggested potential factors from the technology acceptance model that influence customer intentions to adopt financial technology products and services in Malaysia.

The study concluded that perceived ease of use and perceived usefulness have a positive effect on behavioral intentions to adopt financial technology production services. However, perceived risk and cost behave on the contrary. Acceptance is a variable adapted from the technology acceptance model 3. It also states that behavioral intentions are designed by two beliefs, namely, perceived benefits and perceived ease of use.

Technology acceptance model 3 came into existence when technology acceptance model 2 was combined with the perceived ease of use determinant (Venkatesh and Bala 2008; Venkatesh and Davis 2000). Technology acceptance model 3 is the latest model in the area of technology acceptance and includes SNS images, JR, output quality, computer self-efficacy, and other factors that suggest computer anxiety and that effect perceived ease of use and perceived usefulness to determine consumer behavioral intentions.

2.3. Use of Technology

The UTAUT model was introduced and designed 20 years ago by Venkatesh and Davis (2000) from the eight latest accepted technology models. The UTAUT model developed important factors that highlight the importance of using technology primarily in an organization context. The four main contributions of this model are perceived enjoyment, effort expectancy, social influence and facilitating conditions that are intended to effect intentions to use technology (Venkatesh and Davis 2000).

The model was further developed into the UTAUT 2 model, and three more constructs were added: price value, Hedonic motivation, and habits (Venkatesh et al. 2012). Ashta and Biot-Paquerot (2018) and other researchers have shown that in the context of customer adoption of technology, the effects of Hedonic motivation, price value, and habit are significant and complex.

2.4. Conceptual Framework and Development of Hypothesis

The influence of behavioral intention in the context of financial technology is the area of concern in marketing management research. However, there is a paucity of research

regarding Islamic financial technology. Therefore, in this study, behavioral intention is considered as a dependent variable, and the variables of the use of a technology model are considered as independent variables. This relationship between the use of Islamic financial technology and behavioral intention is observed in several studies (Solarz and Swacha-Lech 2021; Baber 2020b; Suryanto and Dai 2020; Kou et al. 2021; Banna et al. 2021b; Abbasi et al. 2021). The study concluded that habits strongly influence customer intention to use mobile banking. In another study, Thaker et al. (2020) ascertained that several components of the UTAUT model were significant in shaping the behavior intentions of customers. Therefore, the hypotheses were framed in light of the literature as depicted in the hypothesized model in Figure 1 below.
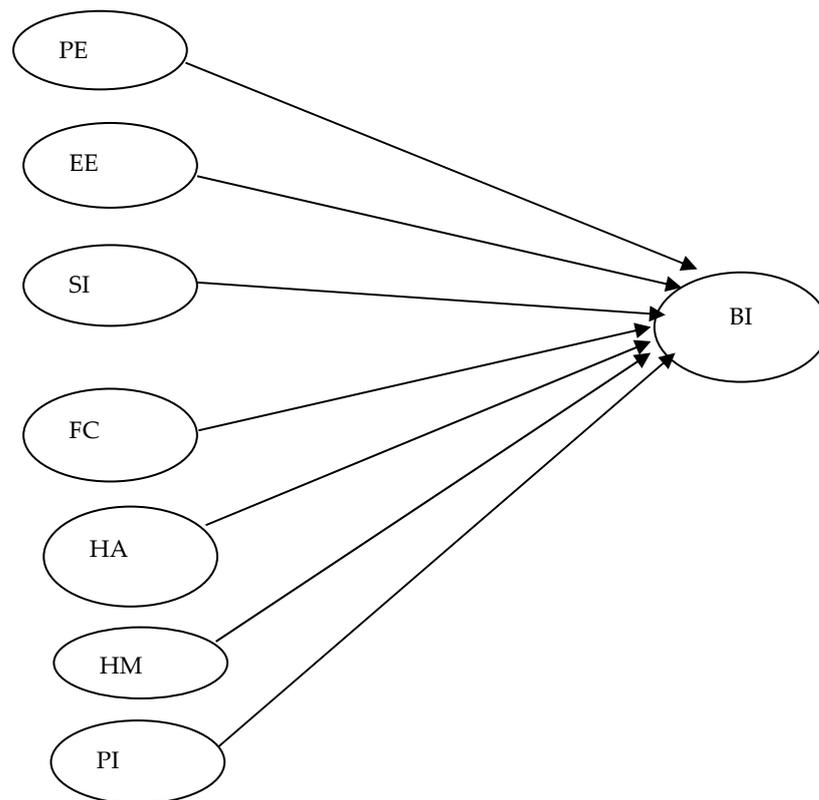

Figure 1. Hypothesized model. (Source: Author's own architecture).

It is well presented in the literature that performance expectancy influences the intention to use financial technology tools (Akhtar et al. 2019).

Hypothesis 1. *Performance expectancy (PE) has a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

Similar to the study by Thaker et al. (2019), it was established that effort expectancy also influences the intentions of customers to use financial technology.

Hypothesis 2. *Effort expectancy (EE) has a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

This study also considers SI, FC, and HA, while considering the use of technology. Raza et al. (2019) investigated the factors that facilitate mobile banking acceptance of Islamic banks in Pakistan. The study used the UTAUT2 model with all indicators as an independent variable and behavioral intention as a dependent variable. In their study, it was concluded that habits significantly influence customer behavioral intention to use

mobile banking with Malaysian Islamic banks. Baptista and Oliveira (2015) also conducted a similar study in Africa using the UTAUT model and measures of behavioral intentions.

Hypothesis 3. *Social Influences (SI) have a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

Hypothesis 4. *Facilitating conditions (FC) have a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

Hypothesis 5. *Habits (HA) have a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

There are many research studies highlighting the influence of HM and PI on the intention to use financial technology (Haider et al. 2018).

Hypothesis 6. *Hedonic motivation (HM) has a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

Hypothesis 7. *Personal innovativeness (PI) has a direct and positive relationship with behavioral intention to use (BI) Islamic fintech.*

3. Research Methodology

This study utilizes the mail methodology for the investigation of the measures of adoption of Islamic financial technology and behavioral intention of customers. The questionnaire was designed based on a theoretical literature review where the items were measured on a 5-point Likert's scale from strongly disagree (5) to strongly agree (1).

The items of a questionnaire were thoroughly reviewed, and deliberations were made such that each item would develop according to the operational context of research variables. The questionnaire was divided into two main parts. The first part consists of the respondent's demographics, and the second part tries to collect data on all the measures of the UTAUT model in the context of Islamic financial technology. A total of 24 questions were asked to measure the intentions of customers regarding the adoption of Islamic financial technology.

The research scale was assessed for its reliability, validity, and one-dimensionality before being utilized for the structural model. It was also assured by asking the respondents that they have a good and secure internet connection for using Islamic financial technology applications introduced by their banks.

The study focuses on the quality of respondents; therefore, the sampling criteria filter those people who can access Islamic financial technology services with a smartphone in various sectors and across many cities in Dubai (UAE). The finalized questionnaire was administered on a population of 1000 respondents from the period of October–January 2021.

In total, 721 research instruments were collected, and only 324 users of Islamic financial technology were identified and qualified for data analysis. From this record, 24 questionnaires were found to be incomplete and were discarded in the next stage. Finally, the study utilized 300 instruments for final data analysis.

PLS-SEM was utilized for data analysis, as it is a useful and flexible tool for the development of statistical models used in the searches in this area. Structural equation modeling can process a large sample, is proper for weak theoretical models, and does not require normality of data (Aguirre-Urreta and Ronkko 2015).

In another study, Hair et al. (2014) suggested the structural equation modeling method employed here as a superior method for small samples. Therefore, this study utilizes structural equation modeling through the use of lisrel 8.80. Initially, the measurement model was assessed, and a further structural model was finalized with all the variables being run in a single model.

4. Results and Discussion

4.1. Respondents Characteristics

The data show (Refer Table 1) that 90% of customers use Islamic financial technology for the purpose of payments. Most of the respondents were males (63%). In terms of the level of education, 43.5% of the customers hold bachelor's degrees. The data also show that most of the customers fall into the category of businesspersons (40%), professionals (27.2%), and students (23.8%).

Table 1. Demographics for all the respondents.

User Characteristics	Users (300)	%	Statistical Test
Gender			
Male	205	69.1	$F = 0.570$
Female	95	30.9	
Education background			
Elementary school	10	2.7	
Junior high school	40	4.4	
Senior high school	150	13.3	$F = 1.066$
Diploma	20	6.6	
Bachelor	80	30.3	
Profession			
Professional	77	25.8	
Student	78	26.6	
Housewife	30	10.0	$F = 13.858$
Businessperson	105	35.0	
Others	10	3.3	
Income			
<3 million	106	35.3	
3–5 million	105	35.2	
6–10 million	59	19.8	
11–15 million	10	3.3	$F = 13.990$
16–20 million	10	3.3	
>20 million	10	3.3	
Expenditure			
<2 million	160	53.3	
2–4 million	100	33.3	
5–9 million	20	6.66	$F = 9.009$
10–14 million	20	6.66	

4.2. Measurement Model Evaluation

The researchers working around PLS estimations explain both models simultaneously. The measurement model estimates and examines the accuracy of the model, whereas the second one, which is the structural model, investigates the relationships and defines the explanatory power of the model thus formed. The one-dimensionality was assessed though CFA (Confirmatory Factor Analysis). The values are given in Figure 2.

The figures (Refer Table 2) obtained for the assessment of the measurement model for composite reliability, standard loadings, t values and from the Alpha values from these statistics' one-dimensionality, composite reliability and discriminant validity can be ascertained. In our study, all these statistical values were assessed. The study uses factor loadings, average variance extracted to support convergent validity and Cronbach's Alpha to support reliability. Recommended values of standard loadings must be higher than 0.5 (Ryu 2018). Recommended Cronbach's Alpha value to support reliability must be higher than 0.7 (Tenenhaus et al. 2005). The values were found to be in an acceptable range, as shown below, indicating one-dimensionality, reliability, and validity.
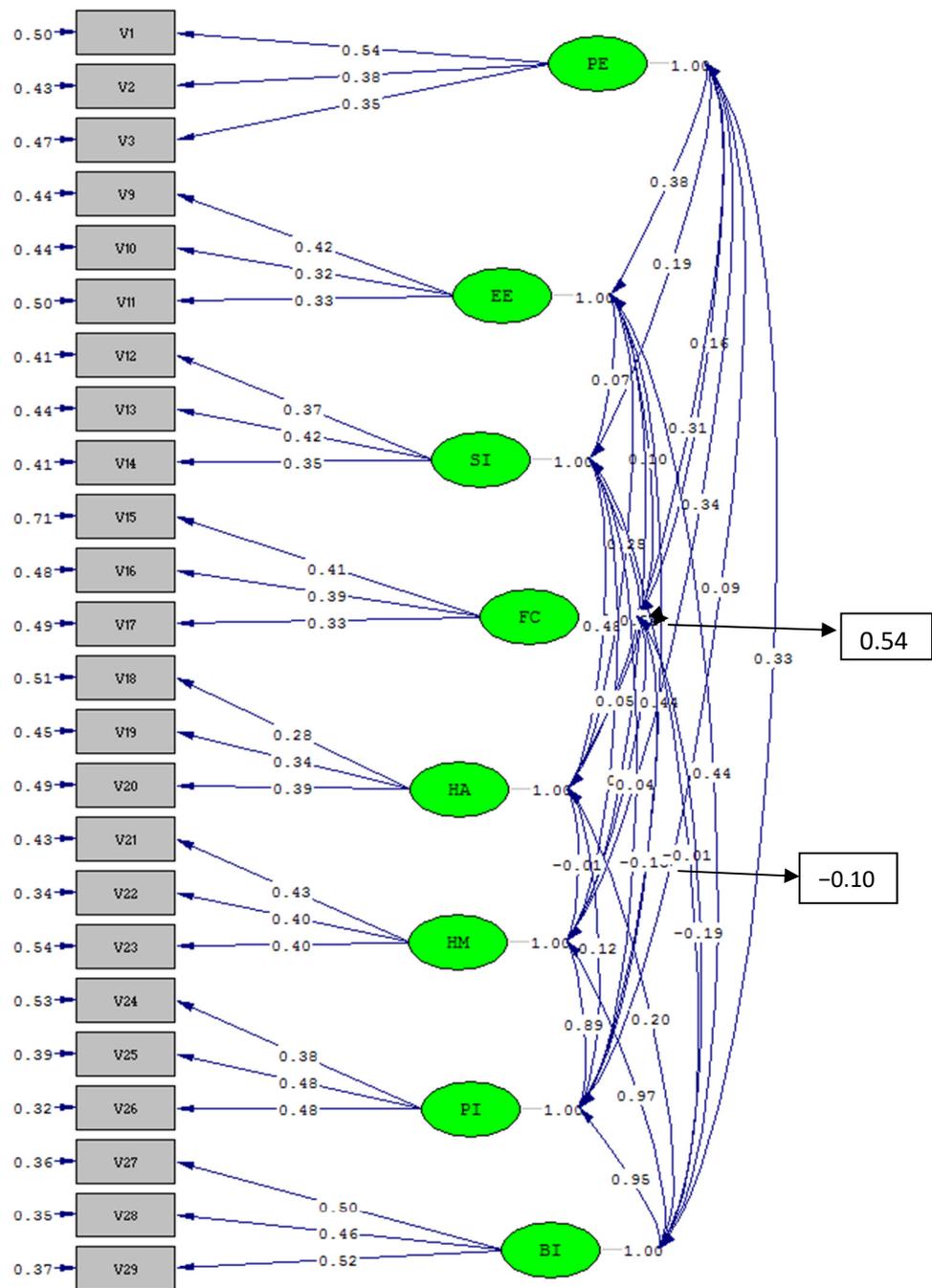
Figure 2. CFA for all study scales.

Table 2. Standard loadings, Cronbach's Alpha, and t values.

S. No	Constructs	Standard Loadings	Cronbach's Alpha	t Values
1.	Performance Expectancy	0.890	0.89	2.98
2.	Effort Expectancy	0.760	0.98	2.89
3.	Social Influence	0.887	0.78	3.87
4.	Facilitating Conditions	0.590	0.77	4.66
5.	Hedonic Motivation	0.578	0.78	4.77
6.	Habits	0.687	0.89	2.99
7.	Personal Innovativeness	0.890	0.90	1.98

4.3. Construct Reliability (CR)

The internal consistency was ascertained through the calculation of construct reliability using the formula given below. The value should be greater than 0.6.

$$CR = \frac{\left[\sum\limits_{i=1}^{n} sl_i\right]^2}{\left[\sum\limits_{i=1}^{n} sl_i\right]^2 + \sum\limits_{i=1}^{n} e_i}$$

where sl = standardized loadings and e = corresponding error terms.

Variance Extracted (VE)

A supplementary measure was ascertained through the calculation of variance extracted using the formula given below. The value should be greater than 0.5

$$VE = \frac{\sum\limits_{i=1}^{n} sl_i{}^2}{\sum\limits_{i=1}^{n} sl_i{}^2 + \sum\limits_{i=1}^{n} e_i}$$

All the values are in acceptable ranges. The Table 3 below depicts *CR* and *VE* values for all study scales.

Table 3. Scale reliability of the study scales.

Construct	Construct Reliability	Variance Extracted	VIF
Performance Expectancy	0.79	0.46	3.44
Effort Expectancy	0.96	0.80	4.34
Social Influence	0.89	0.67	2.90
Facilitating Conditions	0.85	0.55	3.77
Hedonic Motivation	0.85	0.54	4.77
Habits	0.89	0.63	2.97
Personal Innovativeness	0.88	0.61	3.00

The VIF (Variance Inflation Factor) score is greater than the acceptable range, i.e., >2.5 ensuring multicollinearity.

4.4. Structural Model Evaluation

After the measurement model is assessed, the next step is the assessment of the structural model for hypothesis testing and generation of a final model from which the results can be interpreted. The hypothesized structural relationships were assessed between measures of the UTAUT model and the behavioral intention of customers to adopt Islamic financial technology. The assessment was carried out based on statistical significance of the path values which were obtained after the model was converged.

The results in Figure 3 and Table 4 show that most of the path values were positive and directly affect behavioral intention to adopt Islamic financial technology by the customers, except for effort expectancy with a negative value of b = -0.11 ($p < 0.05$), social influence with a negative value of b = -1.04 ($p < 0.05$), habit with a negative value of b = -0.34 ($p < 0.05$), and hedonic motivation with a negative value of b = -0.98 ($p < 0.05$). The factors that affect behavioral intention positively are performance expectancy with a value of b = 0.063 ($p < 0.05$), facilitating conditions with a value of b = 1.12 ($p < 0.05$), and personal innovativeness with a value of b = 2.02 ($p < 0.05$).

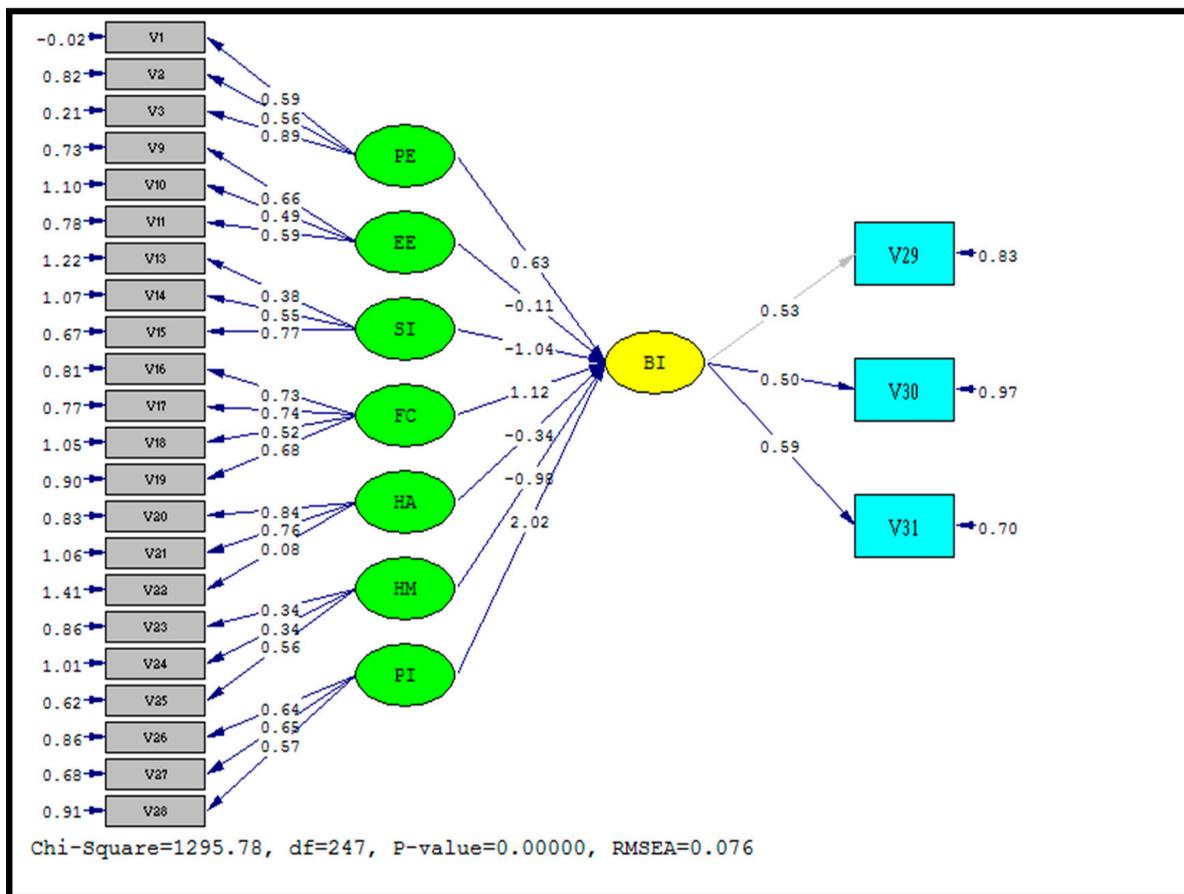**Figure 3.** Structural model of all research constructs.

Table 4. Path estimates of all research relationships.

Relationship	Path Estimates
PE——-BI	0.63
EE——-BI	0.11
SI——-BI	−1.04
FC——-BI	1.12
HA——-BI	−0.34
HM——-BI	0.98
PI——-BI	2.02

5. Conclusions

The conclusion of the study should be in line with the objective, which was framed after the comprehensive literature review. The objective of this study was to provide a new and improved understanding of the influencing factors for behavioral intentions of customers for Islamic financial technology; in this regard, seven hypotheses were tested.

The findings of this study corroborate with previous several studies, such as (Agarwal and Zhang 2020; Choi et al. 2019; Ernst & Young 2019; Xie et al. 2021; Noreen et al. 2022; Singh et al. 2020; Dadoukis et al. 2021; Hu et al. 2019; Fu and Mishra 2022; Solarz and Swacha-Lech 2021), and concludes that financial technology increases the flexibility to use financial services.

In one of the remarkable studies conducted by (Nangin et al. 2020; Singh et al. 2020), PEOU is the most influencing factor in the behavior intentions of customers using mobile banking. This corroborates with this study and can be attributed to the fact that increased

security and user friendliness in reaching financial technology services facilitates higher intentions in individuals to utilize financial technology.

Knowledge also facilitates individual intentions for using financial technologies, and slowly and gradually, financial technology becomes part of daily life activities and enhances customer intentions to use financial technologies more and more. Another study (Thaker and Allah Pitchay 2018) concluded that the other factor of the UTAUT model that has a strong relation with individual intentions to use mobile banking services in Pakistan is social influence. This implies that in many developing countries, the social environment plays an important role. The social environment includes family, peer pressure, friendship and imitating celebrities, which all play an important role in shaping an individual's point of view regarding the acceptance of technology in the context of financial technology.

The acceptance model is an important model when it comes to influencing customer intentions to adopt mobile banking and other financial services. The results generated by this study bring a comprehensive perspective for researchers, policymakers, and practitioners in banking and institutional management, such that new policies can be designed by taking into consideration the factors that greatly impact the facilitation of the adoption of financial technology in Islamic banks.

Financial technology stakeholders should also take note about the most influential items that influence customer intentions for each Islamic financial technology application. The policies that were framed and implemented in light of this study are proven to be more beneficial and appropriate to customer needs. The results can be useful for any financial security in any developing country looking for the facilitation of Islamic banking financial technology services.

The main issues that can be addressed by Islamic financial technology service providers are facilitation of the benefit of Islamic financial technology and Islamic financial technology should be made beneficial and convenient to use. The main factors through which Islamic financial technology can be taken forward are price comparison to value and recommendations by users of other financial technology applications.

Author Contributions: Conceptualization, visualization, and supervision, M.R.R.; methodology, M.S.K.; validation, formal analysis, and investigation, A.B. Original draft preparation, writing—review and editing, I.T.H. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

Abbasi, Kaleemullah, Ashraful Alam, Min (Anna) Du, and Toan Luu Duc Huynh. 2021. FinTech, SME Efficiency and National Culture: Evidence from OECD Countries. *Technological Forecasting and Social Change* 163: 120454. [CrossRef]

Agarwal, Sumit, and Jian Zhang. 2020. FinTech, Lending and Payment Innovation: A Review. *Asia-Pacific Journal of Financial Studies* 49: 353–67. [CrossRef]

Aguirre-Urreta, Miguel, and Mikko Ronkko. 2015. Sample Size Determination and Statistical Power Analysis in PLS Using R: An Annotated Tutorial. *Communications of the Association for Information Systems* 36: 3. [CrossRef]

Ahmed, Ali Saeed, Mukesh Kumar, and Mahmood Asad Moh'd Ali. 2020. Adoption of FinTech and Future Perspective: An Empirical Evidence from Bahrain on Digital Wallets. Available online: https://ieeexplore.ieee.org/document/9317298 (accessed on 22 May 2022).

Akhtar, Sadia, Muhammad Irfan, Asma Sarwar, and Qurat Ul Ain Rashid. 2019. Factors Influencing Individuals' Intention to Adopt Mobile Banking in China and Pakistan: The Moderating Role of Cultural Values. *Journal of Public Affairs* 19: e1884. [CrossRef]

Ascarya, Ascarya. 2021. The Role of Islamic Social Finance during COVID-19 Pandemic in Indonesia's Economic Recovery. *International Journal of Islamic and Middle Eastern Finance and Management* 15: 386–405. [CrossRef]

Ashta, Arvind, and Guillaume Biot-Paquerot. 2018. FinTech Evolution: Strategic Value Management Issues in a Fast Changing Industry. *Strategic Change* 27: 301–11. [CrossRef]

Atif, Mohammad, M. Kabir Hassan, Mustafa Raza Rabbani, and Shahnawaz Khan. 2021. Islamic FinTech: The Digital Transformation Bringing Sustainability to Islamic Finance. In *COVID-19 and Islamic Social Finance*. London: Routledge, pp. 94–106.

Baber, Hasnan. 2020a. FinTech, Crowdfunding and Customer Retention in Islamic Banks. *Vision* 24: 260–68. [CrossRef]

Baber, Hasnan. 2020b. Impact of FinTech on Customer Retention in Islamic Banks of Malaysia. *International Journal of Business and Systems Research* 14: 217–27. [CrossRef]

Banna, Hasanul, M. Kabir Hassan, Rubi Ahmad, and Md Rabiul Alam. 2021a. Islamic Banking Stability amidst the COVID-19 Pandemic: The Role of Digital Financial Inclusion. *International Journal of Islamic and Middle Eastern Finance and Management* 15: 310–30. [CrossRef]

Banna, Hasanul, M. Kabir Hassan, and Mamunur Rashid. 2021b. Fintech-Based Financial Inclusion and Bank Risk-Taking: Evidence from OIC Countries. *Journal of International Financial Markets, Institutions and Money* 75: 101447. [CrossRef]

Banna, Hasanul, Md Aslam Mia, Mohammad Nourani, and Larisa Yarovaya. 2021c. Fintech-Based Financial Inclusion and Risk-Taking of Microfinance Institutions (MFIs): Evidence from Sub-Saharan Africa. *Finance Research Letters* 45: 102149. [CrossRef]

Baptista, Gondalo, and Tiago Oliveira. 2015. Understanding Mobile Banking: The Unified Theory of Acceptance and Use of Technology Combined with Cultural Moderators. *Computers in Human Behavior* 50: 418–30. [CrossRef]

Bhatti, Tariq, and Maizaitulaidawati Md Husin. 2019. An Investigation of the Effect of Customer Beliefs on the Intention to Participate in Family Takaful Schemes. *Journal of Islamic Marketing* 11: 709–27. [CrossRef]

Buckley, Ross P., and Sarah Webster. 2016. FinTech in Developing Countries: Charting New Customer Journeys. *Journal of Financial Transformation* 44: 1–20.

Chau, Patrick Y. K. 1996. An Empirical Assessment of a Modified Technology Acceptance Model. *Journal of Management Information Systems* 13: 185–204. [CrossRef]

Chinnasamy, Gopalakrishnan, Araby Madbouly, and Sameh Reyad. 2021. Fintech: A Pathway for MENA Region. In *Studies in Computational Intelligence*. Berlin/Heidelberg: Springer. [CrossRef]

Choi, Hanbyul, Yoonhyuk Jung, and YoungRok Choi. 2019. Understanding of the Fintech Phenomenon in the Beholder's Eyes in South Korea. *Asia Pacific Journal of Information Systems* 29: 117–43. [CrossRef]

Chong, Felicia Hui Ling. 2021. Enhancing Trust through Digital Islamic Finance and Blockchain Technology. *Qualitative Research in Financial Markets* 13: 328–41. [CrossRef]

Dadoukis, Aristeidis, Maurizio Fiaschetti, and Giulia Fusi. 2021. IT adoption and bank performance during the COVID-19 pandemic. *Economics Letters* 204: 109904. [CrossRef]

Davis, Fred D. 1986. A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results. PhD. dissertation, Massachusetts Institute of Technology, Cambridge, MA, USA.

Dharani, Munusamy, M. Kabir Hassan, Mustafa Raza Rabbani, and Tahsin Huq. 2022. Does the COVID-19 Pandemic Affect Faith-Based Investments? Evidence from Global Sectoral Indices. *Research in International Business and Finance* 59: 101537. [CrossRef]

Ernst & Young. 2019. Global FinTech Adoption Index. 2019. Available online: https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf (accessed on 22 May 2022).

Fu, Jonathan, and Mrinal Mishra. 2022. Fintech in the Time of COVID−19: Technological Adoption during Crises. *Journal of Financial Intermediation* 50: 100945. [CrossRef]

Haider, Muhammad Jamal, Gao Changchun, Tayyaba Akram, and Syed Talib Hussain. 2018. Does Gender Differences Play Any Role in Intention to Adopt Islamic Mobile Banking in Pakistan? An Empirical Study. *Journal of Islamic Marketing* 9: 439–60. [CrossRef]

Hair, Joe F., Jr., Marko Sarstedt, Lucas Hopkins, and Volker G. Kuppelwieser. 2014. Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review* 26: 106–21. [CrossRef]

Hassan, M. Kabir, Mustafa Raza Rabbani, and Mahmood Asad Mohd Ali. 2020. Challenges for the Islamic Finance and Banking in Post COVID Era and the Role of Fintech. *Journal of Economic Cooperation and Development* 43: 93–116.

Hendratmi, Achsania, Muhamad Nafik Hadi Ryandono, and Puji Sucia Sukmaningrum. 2019. Developing Islamic Crowdfunding Website Platform for Startup Companies in Indonesia. *Journal of Islamic Marketing* 11: 1041–53. [CrossRef]

Hu, Zhongqing, Shuai Ding, Shizheng Li, Luting Chen, and Shanlin Yang. 2019. Adoption Intention of Fintech Services for Bank Users: An Empirical Examination with an Extended Technology Acceptance Model. *Symmetry* 11: 340. [CrossRef]

Janah, Nasitotul, Fahmi Medias, and Eko Kurniasih Pratiwi. 2020. The Intention of Religious Leaders to Use Islamic Banking Services: The Case of Indonesia. *Journal of Islamic Marketing* 12: 1786–800. [CrossRef]

Karim, Sitara, Mustafa Raza Rabbani, and Hana Bawazir. 2022. Applications of Blockchain Technology in the Finance and Banking Industry Beyond Digital Currencies. In *Blockchain Technology and Computational Excellence for Society 5.0*. Hershey: IGI Global, pp. 216–38.

Khan, Shahnawaz, and Mustafa R. Rabbani. 2020. In Depth Analysis of Blockchain, Cryptocurrency and Sharia Compliance. *International Journal of Business Innovation and Research* 1: 1. [CrossRef]

Khan, Shahnawaz, Mohammed Kabir Hassan, and Mustafa Raza Rabbani. 2021. *An Artificial Intelligence-Based Islamic FinTech Model on Qardh-Al-Hasan for COVID 19 Affected SMEs*. Beyazıt: Islamic Perspective for Sustainable Financial System.

Kou, Gang, Özlem Olgu Akdeniz, Hasan Dinçer, and Serhat Yüksel. 2021. Fintech Investments in European Banks: A Hybrid IT2 Fuzzy Multidimensional Decision-Making Approach. *Financial Innovation* 7: 39. [CrossRef]

Lajis, Siti Muawanah. 2019. Fintech and Risk-Sharing: A Catalyst for Islamic Finance. Available online: https://link.springer.com/chapter/10.1007/978-3-030-05225-6_12 (accessed on 22 May 2022).

Lee, In, and Yong Jae Shin. 2018. Fintech: Ecosystem, Business Models, Investment Decisions, and Challenges. *Business Horizons* 61: 35–46. [CrossRef]

Maranguni, Nikola, and Andrina Grani. 2015. Technology Acceptance Model: A Literature Review from 1986 to 2013. *Universal Access in the Information Society* 14: 81–95. [CrossRef]

Mazambani, Last, and Emmanuel Mutambara. 2020. Predicting FinTech Innovation Adoption in South Africa: The Case of Cryptocurrency. *African Journal of Economic and Management Studies* 11: 30–50. [CrossRef]

Mittelman, Robert, and José Rojas-Méndez. 2018. Why Canadians Give to Charity: An Extended Theory of Planned Behaviour Model. *International Review on Public and Nonprofit Marketing* 15: 189–204. [CrossRef]

Mohamed, Hazik, and Hassnian Ali. 2018. Blockchain, Fintech, and Islamic Finance. Blockchain, Fintech, and Islamic Finance. Available online: https://www.degruyter.com/document/doi/10.1515/9781547400966/html (accessed on 22 May 2022).

Naeem, Muhammad Abubakr, Mustafa Raza Rabbani, Sitara Karim, and Syed Mabruk Billah. 2021. Religion vs. Ethics: Hedge and Safe Haven Properties of Sukuk and Green Bonds for Stock Markets Pre-and during COVID-19. Available online: https://www.emerald.com/insight/content/doi/10.1108/IMEFM-06-2021-0252/full/html (accessed on 22 May 2022).

Nangin, Meryl Astin, Irma Rasita Gloria Barus, and Soegeng Wahyoedi. 2020. The Effects of Perceived Ease of Use, Security, and Promotion on Trust and Its Implications on Fintech Adoption. *Journal of Consumer Sciences* 5: 124–38. [CrossRef]

Nguyen, Liem, Son Tran, and Tin Ho. 2021. Fintech Credit, Bank Regulations and Bank Performance: A Cross-Country Analysis. Available online: https://www.emerald.com/insight/content/doi/10.1108/APJBA-05-2021-0196/full/html (accessed on 22 May 2022).

Nor, Shifa Mohd, Mariani Abdul-Majid, and Siti Nabihah Esrati. 2021. The Role of Blockchain Technology in Enhancing Islamic Social Finance: The Case of Zakah Management in Malaysia. *Foresight* 23: 509–27. [CrossRef]

Noreen, Misbah, M. S. Mia, Zahiruddin Ghazali, and Ferdoushi Ahmed. 2022. Role of Government Policies to Fintech Adoption and Financial Inclusion: A Study in Pakistan. *Universal Journal of Accounting and Finance* 10: 37–46. [CrossRef]

Rabbani, Mustafa Raza. 2021. COVID-19 and Its Impact on Supply Chain Financing and the Role of Islamic Fintech: Evidence from GCC Countries. Available online: https://www.inderscience.com/info/ingeneral/forthcoming.php?jcode=ijasm (accessed on 22 May 2022).

Rabbani, Mustafa Raza, Adel Sarea, Shahnawaz Khan, and Yomna Abdullah. 2021a. Ethical Concerns in Artificial Intelligence (AI): The Role of RegTech and Islamic Finance. Available online: https://link.springer.com/chapter/10.1007/978-3-030-93464-4_38 (accessed on 22 May 2022).

Rabbani, Mustafa Raza, Abu Bashar, Nishad Nawaz, Sitara Karim, Mahmood Asad Mohd Ali, Habeeb Ur Rahiman, and Md. Shabbir Alam. 2021b. Exploring the Role of Islamic Fintech in Combating the Aftershocks of COVID-19: The Open Social Innovation of the Islamic Financial System. *Journal of Open Innovation: Technology, Market, and Complexity* 7: 136. [CrossRef]

Rabbani, Mustafa Raza, Yomna Abdullah, Abu Bashar, Shahnawaz Khan, and M. A. Moh'd Ali. 2020. Embracing of Fintech in Islamic Finance in the Post COVID Era. Paper presented at the 2020 International Conference on Decision Aid Sciences and Application (DASA), Sakheer, Bahrain, November 8–9; pp. 1230–34. [CrossRef]

Rabbani, Mustafa Raza. 2022. Fintech Innovations, Scope, Challenges, and Implications in Islamic Finance: A Systematic Analysis. *International Journal of Computing and Digital Systems* 11: 1–28.

Raza, Syed Ali, Nida Shah, and Muhammad Ali. 2019. Acceptance of Mobile Banking in Islamic Banks: Evidence from Modified UTAUT Model. *Journal of Islamic Marketing* 10: 357–76. [CrossRef]

Ryu, Hyun-Sun. 2018. What makes users willing or hesitant to use Fintech? The moderating effect of user type. *Industrial Management & Data Systems* 118: 541–69. [CrossRef]

Saksonova, Svetlana, and Irina Kuzmina-Merlino. 2017. Fintech as Financial Innovation—The Possibilities and Problems of Implementation. *European Research Studies Journal* 20: 961–73. [CrossRef]

Singh, Shubhangi, Marshal M. Sahni, and Raj K. Kovid. 2020. What Drives FinTech Adoption? A Multi-Method Evaluation Using an Adapted Technology Acceptance Model. *Management Decision* 58: 1675–97. [CrossRef]

Solarz, Małgorzata, and Magdalena Swacha-Lech. 2021. Determinants of the Adoption of Innovative Fintech Services by Millennials. *Ekonomie a Management* 24: 149–66. [CrossRef]

Standard, Dinar. 2021. *Global Islamic Fintech Report*. Available online: https://www.salaamgateway.com/specialcoverage/islamic-fintech-2021 (accessed on 22 May 2022).

Suryanto, Rusdin, and R. Meisa Dai. 2020. Fintech as a catalyst for growth of micro, small and medium enterprises in Indonesia. *Academy of Strategic Management Journal* 19: 1–12.

Tajudin, Misyer, Rosmini Omar, Anssi Smedlund, and Razi Pahlavi Aziz. 2020. Financing with Heart and Intelligence: Augmenting Intimacy and Sustainability through Islamic Fintech. *International Journal of Advanced Science and Technology* 29: 1638–64.

Tenenhaus, Michel, Vincenzo EspositoVinzi, Yves-Marie Chatelin, and Carlo Lauro. 2005. PLS path modeling. *Computational Statistics & Data Analysis* 48: 159–205.

Thaker, Hassanudin Mohd Thas, Ahmad Khaliq, Abdollah Ah Mand, Hafezali Iqbal Hussain, Mohamed Asmy Bin Mohd Thas Thaker, and Anwar Bin Allah Pitchay. 2020. Exploring the Drivers of Social Media Marketing in Malaysian Islamic Banks: An Analysis via Smart PLS Approach. *Journal of Islamic Marketing* 12: 145–65. [CrossRef]

Thaker, Mohamed Asmy Bin Mohd Thas, and Anwar Allah Pitchay. 2018. Developing Waqf Land through Crowdfunding-Waqf Model (CWM): The Case of Malaysia. *Journal of Islamic Accounting and Business Research* 9: 448–56. [CrossRef]

Thaker, Mohamed Asmy Bin Mohd Thas, Md Fouad Bin Amin, Hassanudin Bin Mohd Thas Thaker, and Anwar Bin Allah Pitchay. 2019. What Keeps Islamic Mobile Banking Customers Loyal? *Journal of Islamic Marketing* 10: 525–42.

Todorof, Maria. 2018. Shariah-Compliant FinTech in the Banking Industry. *ERA Forum* 19: 1–17. [CrossRef]

Venkatesh, Viswanath, and Fred D. Davis. 2000. A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science* 46: 186–204. [CrossRef]

Venkatesh, Viswanath, and Hillol Bala. 2008. Technology Acceptance Model3 and Research Agenda on Interventions. *Decision Science* 39: 273–15. [CrossRef]

Venkatesh, Viswanath, James Y. L. Thong, and Xin Xu. 2012. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly* 36: 157–78. [CrossRef]

Xie, Jianli, Liying Ye, Wei Huang, and Min Ye. 2021. Understanding Fintech Platform Adoption: Impacts of Perceived Value and Perceived Risk. *Journal of Theoretical and Applied Electronic Commerce Research* 16: 1893–911. [CrossRef]

Yan, Chen, Abu Bakkar Siddik, Nazma Akter, and Qianli Dong. 2021. Factors Influencing the Adoption Intention of Using Mobile Financial Service during the COVID-19 Pandemic: The Role of FinTech. Available online: https://link.springer.com/article/10.1007/s11356-021-17437-y (accessed on 22 May 2022).

Zaremohzzabieh, Zeinab, Seyedali Ahrari, Steven Eric, Asnarulkhadi Bin, Abu Samah, Lee Kwan, and Zaifunizam Ariffin. 2019. Predicting Social Entrepreneurial Intention: A Meta-Analytic Path Analysis Based on the Theory of Planned Behavior. *Journal of Business Research* 96: 264–76.