

Factors determining behavioral intentions to use Islamic financial technology

Three competing models

Factors
determining
behavioral
intentions

Darmansyah

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Abstract

Purpose – The purpose of this paper is to investigate the influential factors on behavioral intentions toward Islamic financial technology (FinTech) use in Indonesia, for all types of FinTech services as follows: payments, peer to peer lending and crowdfunding.

Design/methodology/approach – This study adopted structural equation modeling using the partial least squares approach to test the hypotheses. Based on purposive sampling, the questionnaire was distributed through an online survey and received 1,262 responses.

Findings – The results demonstrate that the latent variables, planned behavior, acceptance model and use of technology, have a significant impact on encouraging behavioral intentions to use Islamic FinTech. The “acceptance model” latent variable is the most influential factor.

Research limitations/implications – This study was conducted only in Indonesia; therefore, the results cannot be generalized to other countries. However, the study provides important strategic guidelines for policymakers in designing a framework to enhance the development of Islamic FinTech and to achieve financial inclusion. It is suggested that future studies include samples from FinTech users in different countries.

Originality/value – This study adds to the literature especially on the factors affecting behavioral intentions to use Islamic FinTech. There are limited studies concerning this topic, especially for Indonesia. The unique feature of this study is the use of a large primary data set that covers most

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provinces in Indonesia. Furthermore, this study focuses on three types of Islamic FinTech, namely, payments, peer to peer lending and crowdfunding.

Keywords Indonesia, Islamic financial services marketing, Behavioural intention, Islamic financial technology

Paper type Research paper

1. Introduction

Islamic finance continues to gain interest globally from society not only from Muslims but also from non-Muslims. The presence of financial technology (FinTech) is expected to contribute significantly to the development of Islamic finance (Reuters, 2018). Technology and automation have become important parts of the financial services market worldwide (Dubai Islamic Economy Development Centre, 2018). Marszk and Lechman (2018) state that, today, information and communications (ICTs) have a significant impact in shaping the economic and social environment. Aaron *et al.* (2017) define FinTech as an application of digital technology for financial intermediation problems. FinTech plays an important role as a financial intermediary for society and in the daily activities of people around the world, which implies a new era in financial services is being born for banks with the rise of FinTech (Milian *et al.*, 2019). FinTech has greatly changed consumers' ways of performing their financial transactions (Huei *et al.*, 2018). This is shown by the rising investment in FinTech companies worldwide, which reached US\$4,256,202m in 2018. The global transaction value is expected to reach US\$7,971,957m by 2022, an annual growth rate of 17 per cent (KPMG, 2019).

The increased use of technology in financial services reveals is for several reasons such as increased bank efficiency through reduced opportunity costs and encouraging higher customer satisfaction because people can take advantage of financial services anytime, anywhere, so long as they are connected to the internet (Asmy *et al.*, 2018). Above all, several studies such as Solomon *et al.* (2013), Huei *et al.* (2018), Gupta and Xia (2018), Ryu (2018), Zhang *et al.* (2018) and Asmy *et al.* (2019) explain that FinTech helps increase transparency, accessibility, flexibility, reduce risk and improve returns for shareholders. The accelerated growth in the use of FinTech is also caused by an increased number of people connected to mobile services. The Global System for Mobile Communications Association (GSMA) estimates that, by 2025, mobile internet users will exceed five billion people; this implies that the market for FinTech will expand widely (Beyene Fanta and Makina, 2019).

Indonesia, with the world's largest Muslim population, is very much expected to become a world-leading Islamic financial center and FinTech hub. FinTech is growing rapidly in Indonesia and has gained an increasingly favorable impression from foreign investors as a country with a digital economic potential (Hendratmi *et al.*, 2019). According to the Dubai Islamic Economy Development Centre (2018), Indonesia has the most startups worldwide; it is home for 31 of 93 startups that have been registered with the country's Islamic FinTech Association. KPMG (2019) reports that there are around 167 FinTech companies with an investment of US\$182.3m in Indonesia. The total value of disclosed FinTech Investment in 2017 was \$176.75m, the transaction value in the FinTech market in 2018 was \$22,338m and the transaction value is expected to show a 16.3 per cent annual growth (Fintechnews, 2018).

Based on the above explanation, we confirm that Indonesia has great potential to strengthen economic growth through optimizing the role of FinTech as an intermediary between investors and firms. However, to the best of our knowledge, previous studies focused on consumer preferences in adopting mobile banking; few studies observe consumer intentions to used Islamic FinTech, especially in Indonesia. According to Narayan and Phan (2019), the literature on Islamic banking and finance mostly focuses on the Islamic bank performance (44 per cent), i.

e. equity market performance (24 per cent), market interaction (15 per cent) and asset pricing (7 per cent). Though FinTech has attracted the attention of stakeholders, the long-term use of FinTech is still vulnerable and doubtful (Ryu, 2018). Being skeptical about considerable and unexpected risks is a barrier to maximizing the potential of FinTech. This study aims to fill the gap by analyzing the factors affecting behavioral intentions to use Islamic FinTech services including payments, peer to peer (P2P) lending and crowdfunding, in Indonesia. This study uses the theory of planned behavior (TPB) developed by Ajzen (1985), the technology acceptance model (TAM) 3 proposed by Davis (1989) and the unified theory of acceptance and use of technology (UTAUT) 2 of Venkatesh and Davis (2000). These theories have been widely used by researchers to explore customers' intentions.

The rest of this paper is organized as follows. In Section 2, we present a brief literature review of the relevant theories. In Section 3, we describe the conceptual framework and hypothesis development. Section 4 discusses the research methods and the variables. In Section 5, we present and discuss the empirical results of this study. Section 6 summarizes the study's main findings and highlights the contribution of this study to the existing literature. This section also provides some policy recommendations for policymakers and stakeholders to develop appropriate operational frameworks to optimize the potential of the Islamic FinTech revolution.

2. Literature review

2.1 Planned behavior

Planned behavior is a variable adapted from the TPB. The theory is popular because it has proved to be an efficient model to explain intentions, the control of perceived behavior and to predict behavior (Hamzah and Mustafa, 2019). TPB is an extension model from the theory of reasoned action (TRA). The TRA model has been expanded by taking a degree of control over behavior into account, that is expected to moderate the effect of intentions on behavior (Ajzen, 2012).

The only difference between TPB and TRA is that regulations are considered additional determinants of intentions and behavior. According to the theory, understanding behavior depends both on motivation (intention) and ability (control over motivation). These cognitive-behavioral models postulate human behavior is guided by three considerations as follows:

- attitude;
- normative beliefs; and
- control beliefs (Hamzah and Mustafa, 2019).

TPB proposes that the probability of individuals performing certain behaviors increases if they believe that the behavior will produce the desired results; if they think a valued person wants them to behave that way; and if they believe they have resources and opportunities to engage in such behavior (Ajzen, 1991). TPB explains that behavioral intentions are influenced by one's attitude toward the behavior, the subjective norm (SN) and perceived behavioral control (PBC). PBC is influenced by experience and a person's estimation of the difficulty to perform or not perform certain behaviors (Ajzen, 1991).

2.2 Acceptance model

TAM was first introduced by Davis (1985) followed, in 2000, by TAM 2 (Venkatesh and Davis, 2000) and then TAM 3 (Venkatesh and Bella, 2008). TAM is a very popular model to explain and predict system use (Chuttur, 2009). Afterward, the development of TAM

involved behavioral intention as a new variable that was directly influenced by the benefits received. [Davis \(1989\)](#) defines perceived usefulness as the degree to which a person believes using a particular system will improve his/her work performance ([Davis, 1985](#)). TAM is also consolidated with other theories and models such as TPB ([Lee et al., 2003](#)). [Davis \(1985\)](#) describes TAM as being effective in determining the use of innovative technology within an organization or group.

The development of TAM was in three phases, namely, adoption, validation and extension. In the adoption stage, it was tested and adopted through a large number of information system applications. In the validation phase, the researchers note that TAM uses accurate measurements of the use of acceptable behavior in various technologies. The extension phase saw studies in which several new variables were introduced and the relationships between TAM constructions were determined ([Momani and Jamous, 2017](#)).

Using TAM, [Huei et al.'s \(2018a\)](#) study identified the potential factors that influence consumers' intentions to adopt FinTech products and services in Malaysia. The results show that perceived ease of use and perceived usefulness have a significant positive effect on intentions to adopt FinTech's products and services. However, perceived risk and cost have significant negative effects on users' attitudes to FinTech's products and services.

TAM 2 theorizes that the three mechanisms of social influence, namely, compliance, internalization and identification, play a role in understanding the process of social influence. Compliance represents a situation where someone performs a behavior to get a certain reward or avoid punishment ([Miniard and Cohen, 1979](#); [Venkatesh and Bala, 2008](#)). TAM 2 discusses additional theoretical constructs that attach to social interaction (subject norms, volunteerism and imagery) and cognitive instrumental processes [job relevance (JR), quality of results, ability to show results and influence of use utilization] ([Venkatesh and Davis, 2000](#)).

Acceptance is a variable adapted from TAM 3. In using information systems, users consider the benefits and usefulness of the system. Consumer behavioral intentions in using technology are done by TAM. The TAM model, based on the TRA, was developed to predict individual adoption and use of new information technology. It states that an individual's behavioral intention to use is determined by two beliefs, namely, perceived benefits, defined as the extent to which a person believes that using information technology will improve his/her work performance and perceived ease of use, defined as the level at which a person believes that using information technology will be free from effort ([Venkatesh and Bala, 2008](#)).

[Venkatesh and Bala \(2008\)](#) combine TAM 2 ([Venkatesh and Davis, 2000](#)) and the perceived ease of use determinant model ([Venkatesh and Davis, 2000](#)), to develop a technology acceptance model, that is integrated into TAM3. TAM3 presents a complete network of determinants of the adoption and use of individual information technology. Based on a combination of TAM and TAM 2, TAM 3 includes SNs, images, JR, output quality (OQ), result demonstrability (RD), computer self-efficacy, perceptions of external control (PEC), computer anxiety (CA), computer playfulness (CP), perceived enjoyment and objective usability (OU) that affect perceived ease of use and perceived usefulness, which determine consumers' behavioral intentions. The adapted theory is used in this study.

2.3 Use of technology

The UTAUT model was introduced and developed two decades ago by [Venkatesh and Davis \(2000\)](#) based on eight competing technology acceptance models. The models and theories are TRA, TAM, the motivational model, the TPB, a cumulative model, the TAM and the TPB model, the PC utilization model, the innovation diffusion theory and the social cognitive theory model ([Venkatesh and Davis, 2000](#)). [Nistor et al. \(2019\)](#) explain that UTAUT is divided into two categories including TAM and TPB.

UTAUT brings together important factors related to consideration of the importance of using technology and the technology used primarily in organizational contexts. UTAUT has four main contributions [i.e. perceived enjoyment (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC)] that affect intentions to use technology (Venkatesh *et al.*, 2012). Performance expectancy is the level at which the individual believes using the system will help him or she attain gains in job performance. The second contribution is effort expectancy. This is the level of convenience associated with using the system. Social influence is the level where he or she believes they must use a new system. Finally, facilitating conditions is the level to which an individual believes the existing organizational and technical infrastructure supports the use of the system. The development of UTAUT was into UTAUT2, which has seven constructs, namely, PE, SI, EE, FC, price value (PV), hedonic motivation (HM) and habit (H) (Venkatesh *et al.*, 2012).

Venkatesh *et al.* (2003) find that older men with extensive user experience tend to rely more on habit to encourage technology use both in the stored intention pathway and the instant activation pathway thereby expanding the network associated with the use of technology to include a series of new constructs and theoretical mechanisms related to behavioral intentions in the use of technology. Venkatesh and Bala (2008) adapted this construction and definition from UTAUT to the context of the acceptance and use of consumer technology. UTAUT2 can be adapted using technology (Raza *et al.*, 2019).

Current studies show that, in the context of consumer use of technology, the effects of hedonic motivation, price value and habit are complex. First, the impact of hedonic motivation on behavioral intention is moderated by age, gender and experience. An important role of hedonic motivation, price value and habit motivation are in influencing the use of technology in UTAUT2, which is adjusted to the context of consumer acceptance and use of technology.

3. Conceptual framework and hypothesis development

Studying the effect of behavioral intention toward FinTech is widely used in marketing research. However, the behavioral intention study in the Islamic FinTech context is limited. In this study, behavioral intention is considered the dependent variable and three variables, planned behavior, acceptance model and use of technology, are the exogenous variables. The relationships are shown in Figure 1. The relationship between behavioral intention and the use of Islamic FinTech is observed in many studies (Asmy *et al.*, 2018, 2019; Haider *et al.*, 2016; Mohd Thas Thaker *et al.*, 2020; Raza *et al.*, 2018).

The impact of planned behavior on the intention to use Islamic FinTech has been reported in several studies. This study applied three indicators to measure planned behavior, namely, attitude toward behavior (ATB), PBC and SN. Glavee-Geo *et al.* (2017) studied the factors that influence a Pakistani individual's intention to adopt mobile banking. The study found that ATB and PBC have strong positive relationships with an individual's intention to adopt mobile banking. They also reveal that there is a different impact of SN between men and women customers in adoption intention. The authors indicate that PBC is the most reliable component to represent TPB. Additionally, low levels of PBC indicate less motivation to perform the behavior and vice versa. Solomon *et al.* (2013) state that SN is social norms that affect an individual's perception of adopting an innovation. Similarly, Haider *et al.* (2016) find that social norms have a significant impact on forming a customer's intention to adopt Islamic mobile banking. Therefore, the first hypothesis of this study is:

H1. Planned behavior has a positive effect on behavioral intentions to use Islamic FinTech.

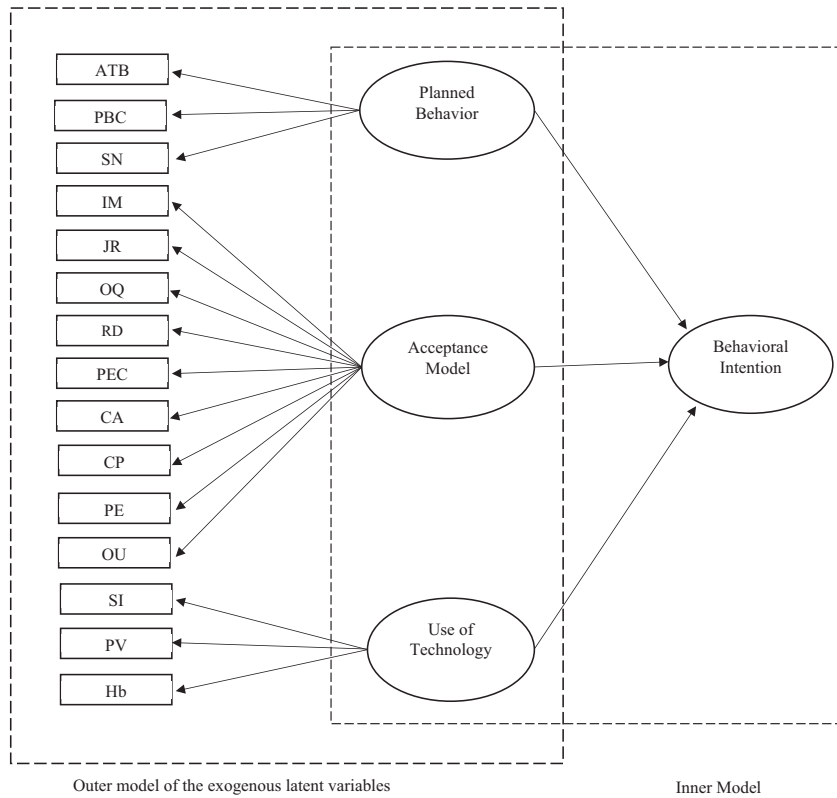


Figure 1.
The conceptual
framework of the
study

This study uses nine indicators that consider the acceptance model, namely, image (IM), JR, OQ, RD, PEC, CA, CP, perceived enjoyment (PE) and OU. [Asmy et al. \(2019\)](#) explored factors among Malaysian users that impact the decision to use Islamic mobile banking. The study uses TAM and its three indicators, namely, perceived ease of use, perceived usefulness and social norms. The results show that perceived usefulness and risk had a significant impact on shaping a user's decision to adopt Islamic mobile banking services. [Akhtar et al. \(2019\)](#) conducted a study to examine the effect of several TAM indicators on mobile banking adoption in Pakistan and China. The results show that, in Pakistan, individuals' intention to adopt mobile banking is influenced by perceived usefulness, social influence and perceived ease of use. In China, perceived usefulness is an important factor that predicts individuals' intentions. [Zhang et al. \(2018\)](#) demonstrate that several TAM indicators including PE, which is a reflection of emotional customer reaction to using the apps, significantly influence customer attitude, which, in turn, affects a customer's intention to adopt mobile banking. Thus, the second hypothesis is:

H2. The acceptance model has a positive effect on behavioral intentions to use Islamic FinTech.

Finally, this study applies three indicators, namely, SI, PV and H, as consumers consider the use of technology. [Raza et al. \(2018\)](#) examine the factors that influence mobile banking

acceptance of Islamic banks in Pakistan. The study used the UTAUT2 model as the dependent variable with eight indicators including habit. The study identified that habit significantly influences a customer's intention to use mobile banking with the Malaysian Islamic bank. [Baptista and Oliveira \(2015\)](#) conducted a study also using UTAUT as a framework guide to understanding the behavioral intentions toward mobile banking adoption in Africa. The study shows that habit plays an essential role in shaping a customer's intention to use mobile banking. A recent study by [Mohd Thas Thaker et al. \(2020\)](#) ascertained that several components representing UTAUT such as perceived relevance, informativeness and perceived expectancy were important. Thus, we can say that existing studies show that UTAUT affects a customer's behavioral intention to adopt Islamic FinTech. Therefore, the third hypothesis is:

H3. The use of technology has a positive effect on the behavioral intention to use Islamic FinTech.

The conceptual framework for this study is shown in [Figure 1](#).

4. Research methods

This study used an online survey to investigate the determining factors of the behavioral intention to use Islamic FinTech in Indonesia. The questionnaire was in Bahasa Indonesia and the items are measured by a four-point Likert scale from strongly disagree to strongly agree. The questions in the survey were developed according to the operationalization of the research variables. The questionnaire was divided into the following two components: general statements relating to respondents' demographics and, secondly, questions relating to the variable indicators about knowledge of Islamic FinTech. The second part of the questionnaire contains three variables, namely, planned behavior, including ATB (one item), SN (two items) and PBC (two items); the acceptance model IM (one item), JR (one item), OQ (one item), results' demonstrability (two items), PEC (two items), CA (one item), CP (one item), perceived enjoyment (one item) and OU (one item); and use of technology, which includes social influence, price value and habit, one item each. In total, 18 questions were used to investigate the intentions of Islamic FinTech users toward the three FinTech types in Indonesia.

The questionnaire was pre-tested for its reliability and validity before being used to the sample population; all respondents have internet access to FinTech services. The study used purposive sampling with boundaries according to the respondents' characteristics. The sampling criterion in this study was people who can access Islamic FinTech services with a smartphone in the various demographics, geographic areas and religions in Indonesia. The online survey questionnaire was distributed to 1,455 respondents from July to September 2019; 1,262 qualifying questionnaires consisted of 778 non-users and 484 users of Islamic FinTech. Users of Islamic FinTech divided into 407 users of the Islamic FinTech payment service, 39 users of the Islamic Fintech P2P lending and 38 users of Islamic Fintech crowdfunding.

Partial least squares (PLS) for structural question modeling is a useful and flexible tool for the construction of statistical models. PLS analysis can process data from a large sample, and is suitable for weak theoretical foundation models and does not require normality of data assumption ([Aguirre-Urreta and Rönkkö, 2015](#)). The analytical method used to test the hypotheses was structural equations modeling (SEM). PLS-SEM is a superior method in social science issues and is suitable for large and small samples, as well as normal data ([Hamdollah and Baghaei, 2016](#)), PLS examines two models, the outer and inner models, to obtain the results.

User characteristics	Payment users (n = 407)		P2P users (n = 39)		Crowdfunding users (n = 38)		Statistical test
	Sub-total	% to n	Sub-total	% to n	Sub-total	% to n	
<i>Gender</i>							
Male	273	67.1	26	66.7	23	60.5	$F = 0.670$
Female	134	32.9	13	33.3	15	39.5	
<i>Education background</i>							
Elementary school	15	3.7	1	2.6	1	2.6	$F = 2.066$
Junior high school	30	7.4	1	2.6	4	10.5	
Senior high school	225	55.3	17	43.6	20	52.6	
Diploma	21	5.2	5	12.8	2	5.3	
Bachelor	122	43.5	15	38.5	11	28.9	
Others	4	0.1	0	0.0	0	0.0	
<i>Profession</i>							
Professional	113	27.8	0	0.0	0	0.0	$F = 23.858^{***}$
Student	88	21.6	0	0.0	0	0.0	
Housewife	33	8.1	0	0.0	0	0.0	
Businessperson	106	26.0	39	100	38	100	
Others	67	16.5	0	0.0	0	0.0	
<i>Job Position</i>							
Top manager	43	10.6	8	20.5	4	10.5	$F = 67.340^{***}$
Business owner	56	13.8	19	48.7	19	50.0	
Staff	117	28.7	10	25.6	9	23.7	
No job level	191	46.9	2	5.1	6	15.8	
<i>Income</i>							
<3 million	196	48.2	9	23.1	10	26.3	$F = 14.990^{***}$
3-5 million	135	33.2	19	48.7	14	36.8	
6-10 million	60	14.7	8	20.5	9	23.7	
11-15 million	9	2.2	0	0.0	0	0.0	
16-20 million	4	1.0	2	5.1	3	7.9	
>20 million	3	0.7	1	2.6	2	5.3	
<i>Expenditure</i>							
<2 million	226	55.5	14	35.9	18	47.4	$F = 10.009^{***}$
2-4 million	147	36.1	18	46.2	13	34.2	
5-9 million	29	7.1	6	15.4	5	13.2	
10-14 million	3	0.7	0	0.0	1	2.6	
14-19 million	1	0.2	0	0.0	0	0.0	
>9 million	1	0.2	1	2.6	1	2.6	
Note: ***Statistical significance at 1%							
Source: Authors' calculations based on the survey questionnaire							

Table I.
The descriptive statistics of the users of the three types of Islamic FinTech services

5. Results and discussion

5.1 Respondents' characteristics

Table I summarizes the respondents according to the different types of Islamic FinTech that they used. From Table I we can conclude that payment is the most popular Islamic FinTech service used by respondents, 407 of 484 respondents used Islamic FinTech for payments. Only 39 and 38 respondents identify P2P lending and crowdfunding, respectively, as the service they use. This implies that these latter two types of Islamic FinTech are still in the

early stage of development. [Table I](#) shows that most respondents were male, 67.1 per cent in the payment group, 66.7 per cent in the P2P group and 60.5 per cent in the crowdfunding group. The F -test shows no significant difference in gender for the three groups.

In terms of the educational level, payments users were dominated by senior high school (55.3 per cent) and bachelor's degree (43.5 per cent). P2P lending users consist of senior high school (43.6 per cent) and bachelor's degree (38.5 per cent). Crowdfunding respondents are dominated by two education levels; over half (52.6 per cent) had a senior high school qualification and 28.9 per cent had a bachelor's degree, whereas 17.5 per cent were elementary school, junior high school, diploma and others. In summary, senior high school and bachelor degree level users dominate the three types of Islamic FinTech service; the statistical test shows no significant difference in terms of educational background for the three user groups.

[Table I](#) also shows the profession of Islamic FinTech users; most of the payment group users were professional (27.8 per cent), followed by businessperson (26 per cent) and student (21.6 per cent). All respondents in P2P lending and crowdfunding groups were businesspersons. There is a significant difference in the professional background among the three groups ($F = 23.858$, significant at the 1 per cent level), which means the distribution of the Islamic FinTech users is strongly associated with the profession. Based on the job position, nearly half of the payment users (46.9 per cent) did not have a specific job position or level, whereas most respondents in P2P and crowdfunding groups were business owners, 48.7 per cent and 50 per cent, respectively. The differences between groups for the job position is significant at the 1 per cent level, which means that the distribution of Islamic FinTech users is associated with their job position.

Islamic FinTech users' income and expenditure were divided into six levels. Payment users mostly have an income of less than IDR 3m, whereas P2P lending and crowdfunding users mostly have an income between IDR 3-5m. In terms of expenditure, most of the payment group's users spend less than IDR 2m (55.5 per cent) followed by 36.1 per cent spending between IDR 2-4m. P2P lending users spend IDR 2-4m (46.2 per cent) followed by 35.9 per cent spend less than IDR 2m. The crowdfunding group is similar to the payments group, with 47.4 per cent of respondents having an expenditure of less than IDR 2m and 34.2 per cent in the IDR 2-4m range. The differences in income and expenditure are significant at the 1 per cent level, implying that the distribution of the Islamic FinTech users was strongly associated with income and expenditure.

5.2 Measurement model evaluation

[Mehmetoglu \(2012\)](#) explains that PLS estimates both the measurement and structural models simultaneously. PLS involves a two-step process encompassing:

- (1) examination of the measurement model; and
- (2) assessment of the structural model.

The measurement model allows us to examine whether the constructs are measured with satisfactory accuracy and the structural model assesses the explanatory power of the model. Composite reliability (CR), average variance extracted (AVE), item loading size significance and discriminant validity are measurements that use the measurement model.

This study uses the factor loading (FL), AVE, CR and Cronbach's alpha to assess convergent validity. The recommended FLs and AVE values to support convergent validity must be higher than 0.5 ([Ryu, 2018](#)). The recommended CR and Cronbach's alpha values to support convergent validity are higher than 0.7 ([Tenenhaus et al., 2005](#)). [Table II](#) shows that the CR (>0.70),

Table II.
The results of the SEM outer model

Item	FL	CR	AVE	α
Planned Behavior		0.913	0.778	0.857
<i>Questionnaire statement</i>				
ATB	0.843			
PBC	0.892			
SN	0.909			
Acceptance model		0.927	0.586	0.910
IM	0.614			
JR	0.779			
OQ	0.749			
RD	0.867			
PEC	0.789			
CA	0.655			
CP	0.800			
PE	0.831			
OU	0.770			
Use of technology		0.913	0.777	0.857
SI	0.859			
PV	0.895			
H	0.891			

Cronbach's alpha ($\alpha > 0.70$), FL (>0.50) and AVE (>0.50) for each construct are higher than the recommended level, thus indicating that all constructs support convergent validity.

5.3 Structural model evaluation

The hypothesized structural relationships are between behavioral intention and the antecedents planned behavior, acceptance model and use of technology. Hypotheses *H1–H3* were assessed in Figure 1. To assess the statistical significance of the path coefficients, this study uses the path coefficient of the structural model and then performs bootstrap analysis (Table III). Based on the results, all factors affect behavioral intention positively, i.e. planned behavior has a value of $\beta = 0.089$ ($p < 0.05$), the acceptance model $\beta = 0.213$ ($p < 0.01$) and the use of technology model $\beta = 0.177$ ($p < 0.01$). Thus, *H1*, *H2* and *H3* are supported (Figure 2).

Therefore, planned behavior has a positive effect on the behavioral intention to use Islamic FinTech (*H1*), the acceptance model has a positive effect on the behavioral intention to use Islamic FinTech (*H2*) and the use of technology model has a positive effect on the behavioral intention to use Islamic FinTech. The results also show that *H2* has the largest *t*-statistic value (3.716); therefore, the acceptance model is the most important variable affecting the behavioral intention to use Islamic FinTech services.

5.4 The behavioral intentions for the three groups of Islamic financial technology users

This study uses the loading factors, AVE, CR and Cronbach's alpha, to assess convergent validity. The FL results and AVE values support convergent validity and the CR and Cronbach's alpha values also support convergent validity. Table IV compares the Islamic FinTech types, i.e. payment, P2P and crowdfunding. The CR (>0.70), Cronbach's alpha ($\alpha > 0.70$), LF (>0.50) and AVE (>0.50) values are higher than the recommended 0.7 and 0.5, showing that all constructs support convergent validity. The results show that, of the three types of Islamic FinTech service, only crowdfunding users in the acceptance model indicator question the IM1 with an FL value of 0.469 (<0.05). This shows that the image does not support convergent validity.

Hypothesized path	Estimate	<i>t</i> -statistic (sig. >1.96)	ρ -value	Result
<i>H1</i> . Planned behavior → behavioral intention	0.089	2.215	0.027	Supported
<i>H2</i> . Acceptance model → behavioral intention	0.213	3.716	0.000	Supported
<i>H3</i> . Use of technology → behavioral intention	0.177	3.431	0.001	Supported

Table III.
The direct relationships of the structural model

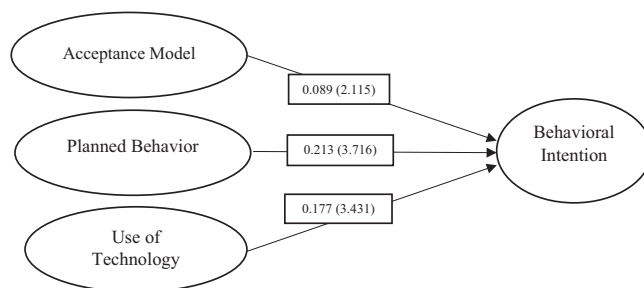


Figure 2.
The SEM-PLS inner model

Table IV.
The results of the SEM outer model for the three groups

Item description	Payment			P2P lending			Crowdfunding			
	FL	CR	α	FL	CR	α	FL	CR	α	
Planned behavior		0.923	0.801	0.876	0.859	0.673	0.756	0.894	0.740	0.822
<i>Questionnaire statement</i>										
<i>Indicators</i>										
ATB	0.874			0.689			0.711			
PBC	0.895			0.854			0.919			
SN	0.915			0.903			0.932			
Acceptance model		0.925	0.581	0.909	0.937	0.629	0.923	0.946	0.688	0.933
IM	0.654			0.611			0.469			
JR	0.768			0.838			0.880			
OQ	0.723			0.823			0.880			
RD	0.856			0.922			0.897			
CA	0.678			0.562			0.585			

(continued)

Item description	Payment			P2P lending			Crowdfunding					
	FL	CR	AVE	α	FL	CR	AVE	FL	CR	AVE	α	
CP	0.791				0.845							0.819
PE	0.824				0.873							0.845
OU	0.767				0.747							0.834
Use of technology												
SI	0.855	0.914	0.779	0.858	0.880	0.899	0.748	0.832	0.925	0.804	0.878	0.861
PV	0.897				0.855				0.925			0.925
H	0.896				0.860				0.904			0.904

Factors
determining
behavioral
intentions

Table IV.

Table V.
The direct relationships of the structural model for the three groups

Hypothesized paths	Payment			P2P lending			Crowdfunding			
	Estimate	<i>T</i> -statistics	<i>p</i> value	Estimate	<i>T</i> -statistics	<i>p</i> value	Estimate	<i>T</i> -statistics	<i>p</i> value	Result
H1. Planned behavior → Behavioral intention	0.095	2.058	0.040	0.150	0.855	0.393	0.085	0.873	0.383	Not supported
H2. Acceptance model → Behavioral intention	0.190	3.156	0.002	-0.012	0.056	0.955	0.650	3.879	0.000	Supported
H3. Use of technology → Behavioral intention	0.158	2.681	0.008	0.497	3.320	0.001	-0.081	0.486	0.627	Not supported

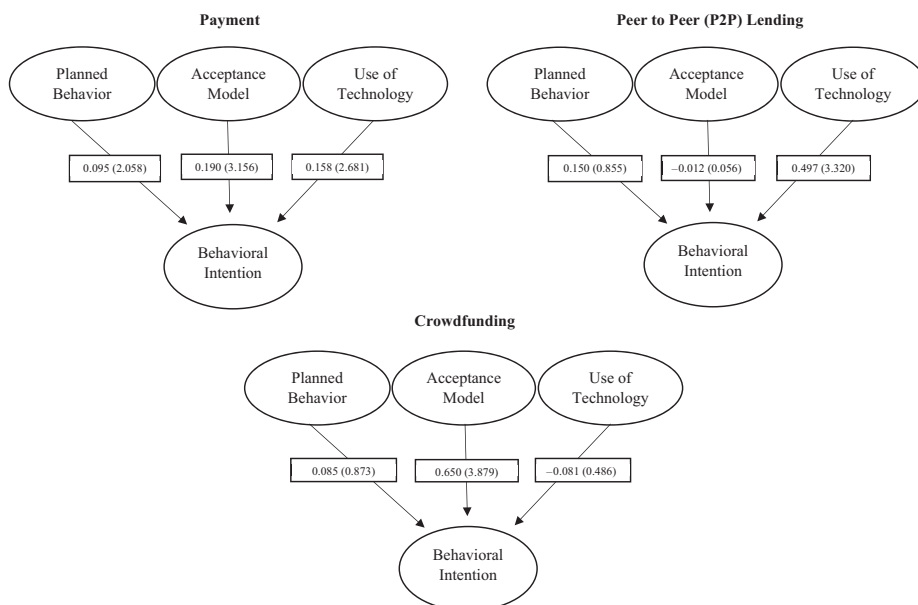


Figure 3. The SEM-PLS inner model results: the interactions with three types of Islamic FinTech services

Table V shows the evaluation of the hypothesized paths for the three groups. Based on the results, in the payment group, all factors affect behavioral intention positively, i.e. planned behavior has a value of $\beta = 0.095$ ($p < 0.05$), the acceptance model $\beta = 0.190$ ($p < 0.01$) and the use of technology model $\beta = 0.158$ ($p < 0.01$). In the P2P lending group, only the use of the technology model affects behavioral intention ($\beta = 0.497$ ($p < 0.01$)) and in the crowdfunding group only the acceptance model supports the behavioral intention ($\beta = 0.650$ ($p < 0.01$)) (Figure 3).

6. Conclusion

The objective of this study was to provide an improved understanding of the influential factors for behavioral intentions toward Islamic FinTech use in Indonesia for all FinTech services (payments, P2P and crowdfunding) both simultaneously and for each service. Three hypotheses were tested by the SEM-PLS approach. Based on the results, all hypotheses were accepted. This implies that the planned behavior, acceptance and use of technology models have a positive, significant relationship with individuals' behavioral intentions on the use of Islamic FinTech. These results imply that the planned behavior constructs, including attitude toward the behavior, PBC and SN, influence individuals' behavior. This agrees with several published studies such as Glavee-Geo *et al.* (2017), Asmy *et al.* (2018) and Zhang *et al.* (2018) and shows FinTech increases the flexibility of access to financial services.

According to Glavee-Geo *et al.* (2017) and Zhang *et al.* (2018), perceived ease of use is one of the most important factors considered by users in mobile bank use. That agrees with the results of this study and implies that increased security, prestige, user-friendliness and the aesthetics in accessing FinTech services produce higher intentions in individuals to use FinTech. The use of technology also impacts individuals' intentions positively, which indicates increased awareness that FinTech is a part of their daily life activities that enhances individuals' intentions. Asmy *et al.* (2019) reveal that social influence has a strong correlation

with individuals' intentions in Pakistan on mobile banking acceptance, which indicates that in Indonesia and Pakistan, as emerging countries, the social environment such as family, friendship and public figures play important roles in influencing individuals' points of view.

The acceptance model is the most important latent variable influencing individuals' intention to use Islamic FinTech compared with planned behavior and the use of technology. The acceptance model also partially plays an important role in impacting the individuals' intentions about the use of payment services. However, for the P2P lending service, the use of technology is the most influential factor in individuals' intentions. Last, but not least, in the use of crowdfunding services, the acceptance model has a more significant impact than planned behavior and the use of technology in shaping individuals' intentions.

In a broader view, this study's results bring a comprehensive perspective for policy-makers especially bank/institution management to increase the quality of Islamic FinTech applications or websites to gain greater intentions toward adopting Islamic FinTech. Stakeholders should consider the most influential factors that affect individuals' intentions for each Islamic FinTech type. The policies that they then implement can be more appropriate to consumers' needs. The results may become an input especially for the Indonesia Financial Services Authority (OJK), with regard to the three types of Islamic FinTech in Indonesia. Factors influencing behavioral intentions to use Islamic FinTech payment are planned behavior, the acceptance model and use of technology, which implies that the OJK should promote Islamic FinTech, as well as coordinating with Islamic FinTech providers to give the best service to their potential users. The main issues that should be addressed by Islamic FinTech providers such as maximizing the benefit of Islamic FinTech are the value of using Islamic FinTech, the non-financial benefits and convenience to use.

To increase the use of Islamic FinTech P2P, the OJK and Islamic FinTech providers should focus on the use of technology such as price comparison to value, offered to potential users and recommendations from potential users' relatives using Islamic FinTech P2P. The behavioral intentions in the crowdfunding group are significantly influenced by the acceptance model, which implies that the OJK and Islamic FinTech providers should focus on developing better Islamic FinTech software/applications to increase the intention to use Islamic FinTech crowdfunding.

In a narrow sense, the results of this study contribute, especially to the Islamic FinTech literature. The use of Islamic FinTech is influenced by the latent variables planned behavior, acceptance model and use of technology models. Some latent variables were dominant influences for each of the Islamic FinTech user groups (payment, P2P lending and crowdfunding). The acceptance model influences the behavior of Islamic FinTech users, especially the payment and crowdfunding users. P2P lending users were influenced by the use of the technology model.

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