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***Correspondence:**
pcukycutes@yahoo.com

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Office:
Department of Accounting
University of
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FACTORS AFFECTING THE USE OF DIGITAL FINANCIAL SERVICES AMONG MOSLEMS: AN ATTEMPT TO EXTEND THE TECHNOLOGY ACCEPTANCE MODEL

Poppy Dian Indira Kusuma[1], Bambang Agus Pramuka[2], Sugiarto[3], Icuk Rangga Bawono[4*]

Affiliation:
[1,2,3,4]Accounting Department, Faculty of Economics and Business, Purwokerto, Indonesia

ABSTRACT

Digital financial services has been popular, particularly in the Covid-19 pandemic where human mobility is limited and sosial distancing is strictly enforced. Therefore, it is not surprising if the use of digital financial services has been increasingly significant. Based on Technology Acceptance Model (TAM), this study aims at examining the effect of perceived benefit and perceived ease of use on moslems' intention to adopt digital financial services. To improve the explanatory power of TAM, this study also examines the effect of halal integrity and digital leadership which are expected to be relevant for moslems and implementing at individual level. Quantitative data were obtained from 92 respondents which were selected using convenience technique sampling. Data were analyzed using multiple linear regression and the findings indicate that perceived benefit, perceived ease of use, and digital leadership have a positive effect on moslems intention to use digital financial services. These findings imply that digital technology providers need to pay attention to these three key factors when developing a new digital technology, particularly in case of moslems adopters.

KEYWORDS: Digitalization; Perceived Benefit; Perceived Ease Of Use; Halal Integrity; Digital Leadership.

INTRODUCTION

Among the characteristics of modernization is that human life is exposed with massive changes and requiring speed in various activities. One of the cope mechanisms to adapt with the existing changes is by adopting digital technologies. According to Taherdoost (2007), recognizing individual acceptance of something is the initial stage of a business. Therefore, it is worthwhile to investigate the acceptance of individuals and organizations toward digital technology.

The information systems literature has discussed a lot about the adoption of digital technology in a professional way by organizations (the recent one is Lorenzo *et al* (2020). At the organizational level, digitalization is associated with the exploitation of various digital opportunities (Rachinger *et al*, 2019). Digital transformation is then defined as a change in the institutional, economic, and community structures at the system level (Brennen and Kreiss, 2016; Unruh and Kiron, 2017). At the organizational level, the decisions and actions of individuals under studied represent those of the organization.

In reality, digitalization has also impacted individuals. Information technology has shaped people's way of life and has changed the way individuals carry out their activities. Individuals' decisions and actions are being heavily influenced by technology. Especially in the current condition of the Covid-19 pandemic, most people find that digital devices can provide greater flexibility, reasonable security and more efficiency (Berger *et al*, 2019; Risteska *et al*, 2017)

At individual level, digitalization can be well-defined as the development of digital technologies in human life (Matt *et al*, 2019). The use of digital technologies at this level is very individual, far from being professional. Individuals choose for themselves what digital technology to use. They also determine for themselves when and how digital technology will be used. All decisions are made for personal reasons.

Previous studies have examined several factors that determine the adoption of digital financial services and other technologies at individual level (e.g. Abdinoor and Mbamba, 2017; Boonsiritomachai and Pitchayadejanant, 2017; Dávideková and Škola Manažmentu, 2016; Dhraief *et al*, 2018; Pantow *et al,* 2020) however, not many have tried to test it among moslems. The examination among moslems is overbearing because moslems may have different patterns in making decisions to adopt digital financial technology. For instance, the existence of a bank usury might make the decision of moslems to adopt digital financial services tend to be more complex.

In the context of this study, TAM (Davis, 1989) serves as the underlying theory to explain the factors that may influence the adoption of digital financial services among moslems. However, this study argues that the model needs to be modified when applied to a group of individuals with unique characteristics, such as moslems with their Islamic values. This is in accordance with the recommendation of several researchers (including: Legris *et al*, 2003; Sun *et al*, 2010) that future studies should include more factors to strengthen the existing models. This study predicts that moslems' decision to adopt digital financial services is also influenced by Islamic values, including halal integrity. The prohibition of usuary, for instance, can affect moslems decision to adopt digital financial services. This is the reason why an examination of digital financial services adoption among moslems becomes significant.

An investigation of the intention to adopt financial digital services by individuals becomes increasingly important in the current situation of COVID-19 pandemic. The use of digital

technology is currently showing a sharp increase. At individual level, individuals make their own decisions regarding what digital tools to use. Therefore, we argue that individuals need to have digital leadership in themselves to motivate them to be more incline to adopt financial digital services.

Taking all together, this study attempts to extend the TAM model to predict the intention of moslems, as individuals, to adopt financial digital services. Two factors, halal integrity and digital leadership, are added to the model to provide more explanatory power. To the best of our knowledge, halal integrity and digital leadership have not been linked to the intention to use digital financial services in the previous literatures. Hipotheses of this study are developed based on Technology Acceptance Model (TAM). In sum, this study aims to examine the perceived ease of use, perceived benefit, halal integrity, and digital leadership on the intention of moslems to use digital financial services.

This study contributes to the development of the literature on information technology and Islamic banking in providing an explanation of the predictors of moslems' intention to adopt digital financial services. As a practical contribution, a study on the acceptance of digital financial services is important to provide direction for the development of digitalization of financial services.

TECHNOLOGY ACCEPTANCE MODEL (TAM)

The adoption of technology is commonly described using 2 models or more. Among the models, TAM is the most widely used in research to predict an individual's intention to use a technology (Liu and Kostiwa, 2007; Curtis *et al*, 2010; Marchewka, 2007; Yousafzai *et al*, 2010; Ghalandari, 2012; Hamid *et al*, 2016;) However, TAM is not free from criticism and limitations. TAM has been criticized for too much emphasizing on the influence of social issues (Ajzen, 1991) and having low explanatory power (Benbasat and Barki, 2007) since it focuses only on two factors, namely perceived ease of use and perceived benefit (Davis, 1989). In addition, it has also been criticized for not including personal factors (Mathieson and Keil, 1998; Taylor and Todd, 1995), not having significant implications for practitioners (Benbasat and Zmud, 1999), and not providing a realistic understanding of technology adoption (Bouwman and Van De Wijngaert, 2009; Salimon *et al*, 2017). This study makes attempt to address these objections. By adding two factors, ie. halal integrity and digital leadership, into the model, the explanatory power of TAM is expected to be increasing and the lack of personal factors in the original TAM model can be addressed.

PERCEIVED BENEFIT AND INTENTION TO USE DIGITAL FINANCIAL SERVICES

Perceived benefit is one of the factors that are considered in the TAM model. Perceived benefit refers to an individual's conviction that a specific technology or innovation would be beneficial to his or her performance (Davis, 1989). In the context of this study, perceived benefit is the belief of moslems that digital financial services will increase their performance.

Empirical evidences proved that perceived benefit has a direct influence on behavioral intention to use technology of interest (Park *et al*, 2014). Previous studies have shown that perceived benefit (which is identical to performance expectancy in UTAUT) has a relationship with behavioral intention in the context of mobile banking services (Shaikh and Karjaluoto, 2015), mobile services (Abbas and Hamdy, 2015; Zarmpou *et al*, 2010), mobile commerce (AbuShanab and Pearson, 2007; Sun *et al*, 2010; Yang, 2005), mobile payment services (Peng *et al*, 2012), instant messages (Wang *et al*, 2012) online travel

services (Li and Liu, 2014), e-learning and blog learning (Lin and Wang, 2012; Tang *et al*, 2014), e-government (Hamid et al, 2016); technology adoption among craftmen in MSMEs (Sugandini et al, 2018), technology based carier choices (Ray et al. 2019), e-purchase intention (Moslehpour et al, 2017).

Based on TAM model and the previous evidences, we argue that when moslems believe that digital financial services will help to improve their performance, they are more willing to use digital financial services. Thus, the following hypothesis is derived.

H_1: *perceived benefit positively affects moslems' intention to use digital financial services.*

PERCEIVED EASE OF USE AND MOSLEM'S INTENTION TO USE DIGITAL FINANCIAL SERVICES

According to TAM model, perceived ease of use is one of the direct predictors of intention to use a particular technology or innovation. Perceived ease of use is a factor that is also considered in several theories and models, including: UTAUT (i.e. effort expectancy), DIT (i.e. ease of use), and MPCU (i.e. complexity). Perceived ease of use refers to an individual's view that utilizing a specific technology is simple or requires minimum effort (Davis, 1989). In the context of this study, perceived ease of use is the belief of moslems that using digital financial services is easy.

Previous studies have shown that perceived ease of use affects the intention to use certain technologies (among others are: Catherine *et al*, 2017; Chiu and Wang, 2008; Ho *et al*, 2003; Venkatesh *et al*, 2003; Hamid et al, 2016; Ozturk et al, 2016; Hansen et al, 2018; Sugandini et al, 2018; Gayan Nayanajith, 2019). In general, people prefer technology that offers flexibility, ease of use and benefits (Catherine *et al*, 2017). If a particular technology is easy to use, individuals will be more willing to learn and use it (Hamid *et al*, 2016). In the context of this study, we predict that the greater moslems' belief that digital financial services offer easiness to use, the greater their intention to use them. Thus, the following hypothesis is formulated.

H_2: *perceived ease of use positively affects moslems' intention to use digital financial services.*

HALAL INTEGRITY AND MOSLEMS' INTENTION TO USE DIGITAL FINANCIAL SERVICES

A moslem whose life is based on Islamic teachings is expected to include Islamic values in his/her decisions, including the decision to use digital financial services. The prohibition on consuming non-halal products/services makes an effort to ensuring the halalness of products/services to be chosen is imperative among moslems. Therefore, halal integrity will be an important factor considered by moslems in choosing digital financial services. This factor is intended to increase the explanatory power of TAM, in order to fit to a unique group of individuals, which in the context of this study is moslem group.

According to Zulfakar *et al* (2012), halal integrity demonstrates that the manufacturing process is devoid of actions that contravene halal rules, either purposefully or accidentally. Some researchers define halal integrity by referring to several specific aspects, such as halal control points, etc. (Kohilavani *et al*, 2012; 2013). In the context of this research, halal integrity is an individual's belief that digital financial service providers have high integrity to ensure the halalness of their services.

Previous studies have examined the halal integrity of products in the market (for example: Manning and Soon, 2014; Soon *et al*, 2017). However, such examination in service industry is also important since some services offered in the market do not meet halal conditions.

For example, conventional banking services and conventional insurance services which are interest based in their nature of operation are excluded from halal services. The halalness of a service should be a major consideration for moslems in making decisions to adopt digital financial services. Thus, the following hypothesis is derived.

H3: *halal integrity positively affects moslems' intention to use digital financial services.*

DIGITAL LEADERSHIP AND MOSLEMS' INTENTION TO USE DIGITAL FINANCIAL SERVICES

The final factor added to TAM model is digital leadership. Leadership is a cross-disciplinary concept. Leadership is a multi-disciplinary concept which refers to an important quality characteristic for organizations Zupancic *et al* (2016). Although digital leadership has been widely studied at organizational level, we argue that digital leadership is also needed by individuals to recognise changes and innovation in digital technology. Adapting the definition of digital leadership from Larjovuori *et al* (2016), in the context of this study, digital leadership is an individual's contribution to the digitization process and the individual's ability to implement digital technology. Digital leadership is defined as an individual's contribution to the digitization process as well as their ability to apply digital technologies.

At individual level, adoption of technology will be more personal. In other word, individuals will choose a certain technology based on personal reasons. They individually decide when and how to use the technology. We argue that individuals should pose a certain degree of digital leadership in theirselves to motivate them to adapt to changes in technology. We predict that individual digital leadership will influence their intention to use digital financial services. Hence, the next hypothesis is derived as follows.

H4: *digital leadership positively affects moslems' intention to use digital financial services.*

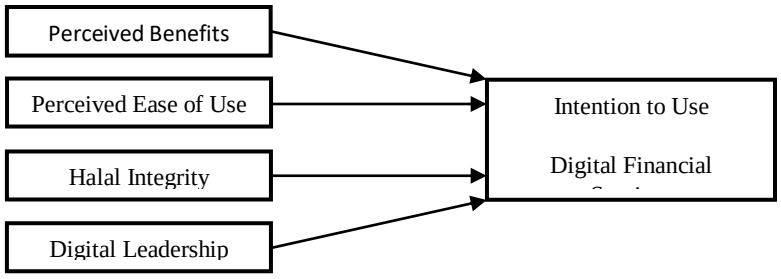

Figure 1. Research Model

METHOD

Sample were selected using convenience sampling method by sharing questionnaire link to whatsapp-based online market groups. The whatssapp groups' members are moslem sellers and buyers who are based in Banyumas Regency, Central Java. The selection of Banyumas Regency as the research location was motivated by the national non-cash movement launched by Bank Indonesia and its currently intensive implementation among moslem society, such as: Islamic boarding school, in Banyumas Regency. This movement inevitably involves adoption of technologies. Therefore, examining the adoption of digital financial services among moslems in Banyumas Regency is significant. A total of 92 respondents filled in and returned the questionnaires. Data were collected from November to December 2020. Due to the Covid-19 pandemic, data were collected using an online survey method. Questionaire was adapted from previous literatures to ensure its content validity. Variables are measured using scales from previous studies as seen in Table 1.

Variables	Definition	Items
Perceived Benefit (Davis, 1989; Davis *et al*, 1989; Venkatesh *et al,* 2003)	The degree to which an individual believes that the digital financial services will be useful for improving his/her performance	- Making use of digital financial services would boost my business performance. - Making use of digital financial services would save my time. - Making use of digital financial services would increase my business productivity. - Making use of digital financial services would make it easier to do my business. - I would benefit from the use of digital financial services.
Perceived Ease of Use (Davis, 1989; Davis *et al*, 1989; Venkatesh *et al,* 2003)	The degree to which an individual believes that using the digital financial services is easy or free of effort	- Learning how to use the digital financial services would be easy for me. - I believe that the digital financial services would do what I want them to do. - My interaction with the digital financial services would be simple and straight forward. - I believe that the digital financial services would be flexible to interact with. - It would be easy for me to learn how use the digital financial services. - I believe that the digital financial services would be easy to utilize.
Halal Integrity (Zailani *et al,* 2015)	Halal integrity shows that the process to produce a product is free from activities that violate halal requirements, either intentionally or unintentionally	- Digital financial service provider must have an internal audit to ensure that the halal requirements are met. - Digital financial service provider must only offer halal financial products on a continuous basis. - Digital financial service provider must have a procedure in place for filing complaints. - Digital financial service provider must take serious corrective steps in response to the complaints. - Digital financial service provider must implement halal regulations in all aspects of business. - Digital financial service provider should understand the halal financial product handling procedures. - Digital financial service provider should understand the Islamic standards for halal financial products
Digital Leadership (Larjovuori *et al,* 2016)	An individual's contribution to the digitization process	- Using digital technologies is enjoyable. - I consider myself as a digital expert. - I always update my digital knowledge

	and the individual's ability to implement digital technology.	- I actively make others enthusiastic about the digital transformation
Behavioral Intention (Catherine et al, 2017)	An individual's intention to adopt digital financial services.	- I am open to learning how to use digital financial services. - I would take time to help others learn how to use digital financial services. - I think digital financial services would be interesting to use. - I intend to use the digital financial services in future.

Tabel 1. Variable Definition and Scale

Characteristics of Respondents

Table 1 shows that respondents were dominated by female (76%). Most of the respondents have income of 5 to 10 million rupiah (42%) and are more than 40 years old (44%).

	Frequency	**Percentage (%)**
Sex:		
Male	22	24
Female	70	76
Total	92	100
Income		
Less than Rp5,000,000	33	36
Rp5,000,000 – Rp10,000,000	39	42
More than Rp10,000,000	20	22
Total	92	100
Age		
Less than 30 years old	25	27
30 – 40 years old	27	29
More than 40 years old	40	44
Total	92	100

Tabel 2. Characteristics of Respondents

Validity and Reliability

The content validity of the scale items is met since according to Chen and Chengalur-Smith, (2015), scale items that were adapted from previously validated instruments can be assumed to be valid. The reliability of the scales was analyzed using Cronbach Alpha reliability test. Table 2 shows Croncbach Alpha coefficients greater than 0.7 for each construct. This result indicates that our instrument is reliable based on a threshold recommended by Nunnally and Bernstein, (1994).

Constructs	**Cronbach's Alpha**
Perceived Benefit	.801
Perceived Ease of Use	.926
Halal Integrity	.925
Digital Leadership	.874
Behavioral Intention	.859

Tabel 3. Results of Reliability Analysis

RESULTS AND DISCUSSION

Result of Multiple Regression Analysis

Multiples regression analysis was performed to determine the predictors of moslem intention to use digital financial services. Table 3 shows a positive and significant effect of perceived benefit (Beta=0.381; t=2.065; p<0.05), perceived ease of use (Beta=0.268, t=2.336; p<0.05), and digital leadership (Beta=0.288; t=2.874; p<0.05) on the intention to use digital financial services. These results indicate that hypotheses 1, 2, and 4 are supported. Meanwhile, halal integrity does not have a significant effect on moslems intention to use digital financial services (Beta=0.047; t=0.561; p>0.05). Thus, hypothesis 3 is not supported.

Tabel 4. Result of Multiple Regression Analysis

	B	SE	Beta	t	Sig.
Constant	0.120	0.689	-	0.174	0.862
Perceived Benefit	0.381	0.184	0.232	2.065	0.042
Perceived Ease of Use	0.268	0.115	0.250	2.336	0.022
Halal Integrity	0.047	0.084	0.049	0.561	0.576
Digital Leadership	0.288	0.100	0.275	2.874	0.005
F=13.647					
Sig=0.000					
R^2=0.386					
Adj R^2=0.357					

DISCUSSION

This study focuses on examining factors that may influence the intention to use digital financial services among moslems. Perceived benefit, perceived ease of use, halal integrity, and digital leadership are predicted as factors that may influence the intention of moslems to use digital financial services.

Results of this study shows that perceived benefit has a positive effect on the intention of moslems to use financial digital services. This result indicates that moslems' believe about the ability of digital financial services to improve their performance can increase their intention to use digital financial services. This result is in line with the notion that individuals are mostly rational. This idea is also true among technology adopters. When faced with several choices of technology, a rational technology adopter will first ascertain the benefits of the technologies before making a decision to adopt a technology. This result coincides with the study of Venkatesh *et al* (2003), Yang (2005), AbuShanab and Pearson (2007), Sun *et al* (2010), Zarmpou *et al* (2010), Wang *et al* (2012), Lin and Wang (2012), Peng *et al* (2012), Tang *et al* (2014), Li and Liu (2014), Abbas and Hamdy (2015), Shaikh and Karjaluoto (2015), Catherine *et al* (2017) which show the ability of perceived benefit in influencing the intention to use.

This study also proves that perceived ease of use has a positive effect on moslems intention to use digital financial services. Moslems' belief in the ease of using digital financial services will increase their intention to use digital financial services. A technology is basically created to substitute manual works. One of the motivations to adopt a technology is to make an execution of works more efficient. Ease of using a technology is closely related to efficiency. Thus, if an adopter believes that a technology is easy to use, he will incline to

adopt the technology. This result provides support to Ho *et al* (2003), Venkatesh *et al* (2003), Chua *et al* (2004), Clodfelter (2010), and Catherine *et al* (2017) who have shown the effect of perceived ease of use on intention to use.

Further, the examination of the effect of digital leadership demonstrates that digital leadership has a positive effect on the intention of moslems to use digital financial services. This result is consistent with the argument that moslems with a high degree of digital leadership will incline to use digital financial services. This is understandable since individuals with a high level of digital leadership have a greater interest in using technology. Thus, it is most likely that moslems with a high level of digital leadership will have a bigger intention to adopt digital financial services.

In the context of moslem adopters, the consideration to choose digital technology may not be only affected by rational reasons. Some religious values are taken for granted and are believed as commands from God. That is why it is significant to consider halal integrity as factor that may affect moslems decision in choosing technology. Surprisingly, this study fails to prove the effect of halal integrity to moslems intention to use digital financial services. This may be due to that the availability of halal digital financial services is still limited. Thus, in some cases, moslems are forced to use a digital financial service without cosidering its halalness as they have no choice. A further investigation using qualitative approach will provide more accurate and compelling explanation for this finding.

CONCLUSION

This study provides evidence of the effect of perceived benefit, perceived ease of use, and digital leadership on the intention of moslems to use digital financial services. This conclusion demonstrates a support for TAM model. This conclusion implies that in order to introduce or develop a new digital technology, factors such as: perceived benefit, perceived ease of use, and digital leadership, need to be considered because these factors are proven to influence individual intentions to use digital financial services.

TAM model has been applied to study technology adoption at organizational as well as individual level. At individual level, TAM model needs to be modified to fit the characteristics of the user. since different characteristic may require different factor to encourage individuals to adopt a new technology or innovation. In the context of this study, digital leadership represents the personal factor of potential user of technology or innovation.

In sum, the results of this study give support to the TAM model and to the inclusion of personal factor, i.e. digital leadership, to the model. As a theoretical contribution, extending the TAM by considering digital leadership will contribute to an increase in the expalanatory power of the model. In addition, the extended model of TAM will expand its usage to explain the adoption of technology in a wider context of study.

These findings imply that digital technology providers should consider three critical aspects, ie. the potential benefits of the technology, the easiness of the thecnology to use, and the degree of digital leadership of the targeted user of the technology, while designing a new digital technology. Eventhough this study does not provide evidence on the effect of halal integrity on the moslems' decision for a reason previously mentioned, this factor should remain to be put into consideration when offering new technology to moslems users. From the perspective of Islam, the halalness of products/services is the main reason to be first considered when choosing to use products/services.

This study is not free of limitations. This current pandemic situation is a challenge for collecting data. One of the limitations of this study is related to the convenience sampling technique used in selecting the sample. With this technique, we have limited control to the selected sample. Other sampling technique, such as purposive sampling, will provide a bigger chance to obtain more appropriate and representative sample. In addition, this study is limited to examining the intention stage of using digital financial services. An examination in the behavior stage will provide a more complete picture of the influence of the factors of interest. This is important because intention is not always related to behavior.

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