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Submission date: 22-Sep-2021 01:33PM (UTC+0700)
Submission ID: 1654551735
File name: ,_The_effects_of_subjective_norm_and_knowledge_about_riba....pdf (274.64K)
Word count: 8872
Character count: 47098

The effects of subjective norm and knowledge about riba on intention to use e-money in Indonesia

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Received 8 October 2019
Revised 18 April 2020
Accepted 18 April 2020

Abstract

Purpose – Prior studies in the context of electronic money have examined the effect of social pressure [subjective norm (SN)] on usage intention, but the results are found inconclusive. Individual factor is said to be one of the reasons. Therefore, this study aims to propose knowledge about riba (KR) as the individual factor that might explain the inconsistent previous findings.

Design/methodology/approach – A total of 253 responses are collected using online questionnaire. The data are examined by using structural equation modeling (SEM). The interaction moderation technique is used to investigate the moderating role of KR on intention to use e-money.

Findings – The results show that SN significantly influences customers' perceived usefulness (PU), ease of use (PEU) and intention to use e-money (INT). PU is also proven as a direct predictor of INT. On the contrary, PEU does not significantly influence customer INT, providing support for the indirect effect of hypotheses between PEU–PU–INT. Furthermore, KR is found moderate in the link between PU and INT. Interestingly, the moderating effect of KR does not exist in the relationship from SN and PEU to INT.

Research limitations/implications – This study has a limitation in terms of the samples that are mainly dominated by students. Students' perception might be different from practitioners'.

Practical implications – The results indicated that Indonesian customers are getting aware and knowledgeable about riba. It weakens the effect of PU on INT. SN as a social factor has also a strong effect on INT. As a practical implication, this paper suggests the government to develop and regulate a more *Sharia*-compliant business model for e-money. The public must be well informed and also well educated. The socialization and education must be included in any Muslim communities. In addition, given the fact that the chip-based e-money products in Indonesia are owned by conventional banks, it is going to be a wise idea if the government can partner up with the Islamic banks to design and develop the *Sharia*-compliant e-money.

Originality/value – This paper contributes to the electronic money and internet banking literature by considering Islamic principle factor, that is the rise of public KR. This paper show that inconclusive previous findings might be depended on the public KR.

Keywords Knowledge, Intention, Perceived ease of use, Perceived usefulness, e-Money, Intention, Riba

Paper type Research paper

This study is funded by the Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia.

1759-0833
DOI 10.1108/JIMA-10-2019-0203

Introduction

Electronic money or e-money emerged as a revolutionary payment system in the business world (Papadopoulos, 2007), more specifically in Indonesia. It strongly impacts business activities. There is a growing trend of e-money use as a mode of payment in Indonesia as surveyed by Daily Social (2017). From the survey, it was found that 56.8% of Indonesian consumers used e-money less than 1 year, whereas 34.4% of them have used it in between 1 and 3 years, and the rest have used it more than 3 years (Aji, 2019). The Central Bank of Indonesia reported that there was Rp. 12tn value of electronic money being transacted by the fourth quarter of 2017. It also reported that the transaction value increased by 26.2% to approximately Rp. 47tn by the end of 2018. The growing trend keeps increasing and eventually is predicted to grow in 2019 as several providers are being stimulated to develop their own e-money.

The phenomena were responded by the Central Bank of Indonesia to encourage non-cash national movement (GNNT) (Ayudya and Wibowo, 2018). As a preventive purpose, the Central Bank of Indonesia issued new regulation on electronic money contained in the Central Bank of Indonesia Regulation (PBI) No. 20/6/PBI/2018 on e-money. This regulation is more strict, revising previous regulation recorded in the Central Bank of Indonesia Regulation (PBI) No. 11/12/PBI/2009 on e-money (Bank Indonesia, 2018). Some e-money providers and operators are negatively impacted by the new PBI. As a consequence, many of them are banned. However, it also raised other e-money to show up, such as OVO from Lippo Group, DANA and LinkAja.

The terms e-money and e-wallet are used interchangeably. There is a similarity between those two in which both are digitalized system of payment. Several researchers have their own definition of e-money. Penn (2005) defined it as a stored value of money where a record of the funds is stored on an electronic device. It is also mentioned by Geva and Kianieff (2002) that electronic money denotes value paid in a various digital retail payment mechanism, or described as "stored-value products." Kreltszheim (1999) said that e-money is a value that can be directly transferred without the existence of the third party.

Despite its similarity, both e-money and e-wallet have a difference in the way it stores the users' data. In the context of e-money, the nominal value topped up by users is stored in a chip. This chip-based electronic money is usually owned by banks. For example, in Indonesia setting, there are Tap Cash (by Bank BNI), Flazz (by Bank BCA), e-Money (by Bank Mandiri) and Brizzi (by Bank BRI). As for e-wallet, the nominal value topped up by users is stored in a server. It is a server-based e-money which is owned by the operator; for example, T-Cash which is currently rebranded as LinkAja (operated by Telkomsel), Go-Pay (operated by Go-Jek) and OVO (operated by Lippo Group). The Central Bank of Indonesia defined e-money as the payment instrument issued based on the value topped up by provider and stored electronically in a server or chip. The value cannot be treated as a deposit. It is mentioned in PBI No. 20/6/PBI/2018. Therefore, based on that definition, e-wallet is also considered as part of e-money.

In academic literature, there is growing attention on e-money and customer research. A descriptive study has been done by Wulandari *et al.* (2016) to show customer acceptance in using e-money. Trinugroho *et al.* (2017), on the other hand, conducted an in-depth interview to explore people readiness for a cashless society. More quantitative studies have been done by Ayudya and Wibowo (2018), Farida and Ardyan (2016) and Prayidyaningrum and Djamaludin (2016). All of them used the Theory of Planned Behavior (TPB) as the basis to predict customer intention to use e-money (INT). The first mentioned added the variable locus of control (LoC) to give more insightful findings. Besides, most research in e-money also used Theory of Acceptance Model (TAM), such as Amin *et al.* (2015) and Sumerta and Wardana (2018).

Previous aforementioned researches found that customer INT can be explained by both TPB and TAM. However, research examining subjective norm (SN) on TAM resulted in the

inconclusive findings. Riemenschneider *et al.* (2003), Cheung *et al.* (2002) and Igbaria *et al.* (1997) found a considerable impact of SNs on TAM. On the contrary, Lau *et al.* (2001) and Roberts and Henderson (2000) found it insignificant. Context differences such as individual, technology-related and one-contingent factors were said to be the reason (Schepers and Wetzels, 2007).

In 2018, as reported by Kompas.com, the government, through the Financial Service Authority (OJK), strongly encouraged Islamic financial technology (fintech) products to grow (Movanita, 2018). It is aimed to help improve Islamic financial services ecosystem in Indonesia. However, without public support, it will be hard to implement.

Nowadays, the growing popularity of electronic money and cashless payment system in Indonesia is positively related to the public growing concern of riba. Consequently, public has the initiative to form particular communities such as X-Bank, *Komunitas Anti Riba* (Anti-Riba Community), *Masyarakat Tanpa Riba* (Society Without Riba) and many more. It affected people behavior to avoid activities that are suspiciously related to riba practice.

In the financial industry (bank and non-bank), resign behavior is massive. In 2017, the total number of employees in Bank Danamon, Bank Mandiri and Adira Finance decreased by 6.021, 633 and 7.609, respectively (Detik.com, 2017). The employees, especially who are Muslims, are getting afraid to be punished by God because riba is one of the ten biggest sins in Islam. People with understanding and awareness about riba might become the main reason for it to happen. The effect is believed to also occur in the context of financial technology products such as e-money payment system.

Given the above facts, yet, there is no specific previous research relating e-money transaction with usury or riba. Therefore, the purpose of this research is to examine the effect of SN and knowledge about riba (KR) on customer INT as a new method of payment in Indonesia. Moreover, another objective of this research is to give empirical insight for the government as the basis to make regulations concerning the development of Islamic financial ecosystem.

Literature review

Riba (usury) in Islamic perspective

Riba is translated in different ways in academic literature. Some termed it as an interest, premium, increase, grow, excess, inflate and usury. The word riba comes from the Arabic word "*raba*" which literally means "to grow" or "expand" or "increase" or "inflate" or "excess" (Ahmad and Hassan, 2007). However, it does not always mean that every increase is riba. In order to judge something to be riba, literal meaning is not enough. The knowledge from the Quran and the Hadith to understand the context and meaning is needed.

In the Quran, there are some verses mention the prohibition of riba. However, they do not clearly define what riba is. Yet, based on the historical practices the prohibition of riba in the Quran is known as riba "*al-jahiliyyah*" (Farooq, 2009). It is said "*al-jahiliyah*" (ignorance) because the practice occurred during the period of revelation. Moreover, based on the hadith, there are two general types of riba, namely, riba "*al-fadhl*" (related to sale transaction) and riba "*an-nasiah*" (related to sale and debt transaction involving the delay). The last mentioned correspond to riba "*an-nasiah*" (Farooq, 2009). If further classified, riba in Islamic perspective is an excess that happens in either debt or sale transaction. In debt transaction, there are two types of riba, namely, riba "*al-jahiliyyah*" (an excess in debt that as a penalty of the delayed payment) and riba "*al-qardh*" (an increase in debt that is not related with delay payment). In a sale transaction, there are another two types of riba, namely, riba "*al-fadhl*" (an excess because of an exchange of ribawi goods) and riba "*al-yad*" (an excess because of the double agreement in a transaction).

Some Muslim scholars believed that e-money system falls under riba transaction. It is because some value of money topped up by the users to the server is assumed to be used by

the operators. It is then concluded that the core business model of e-money is a debt. In Islamic jurisprudence there is a maxim that any excess in a debt transaction is classified as riba (*al-qardh*). However, according to Aji (2019), that conclusion is prematurely made. He continues that e-money business model must be distinguished from the bank. In a bank business, it is clear that debt becomes the core reason the bank survive. Yet, e-money is not a bank. It does not survive by rotating users' money. In fact, the Central Bank of Indonesia on its Regulation (PBI) No. 20/6/PBI/2018 on e-money article no. 49 verse no. 1, does not allow e-money operators to do so. From this perspective, the e-money system cannot be judged as riba. However, many Indonesia still holds a suspicious attitude toward e-money. That is why knowledge of riba can be the contingent variable that might affects INT as a mode of payment.

Hypotheses development

Subjective norm, perceived usefulness and perceived ease of use

Davis (1989) developed the TAM to explain user's acceptance of new technology. The model was strongly influenced by the Theory of Reasoned Action (TRA) (Schepers and Wetzels, 2007). The first TAM shows that customers' actual usage of new system is influenced by users' behavioral intention, attitude, perceived ease of use (PEU) and perceived usefulness (PU) of the new information system or technology, and unobserved external variables (King and He, 2006; Ma and Liu, 2004). Malhotra and Galletta (1999) argued that social factors must be accounted for in the TAM. Therefore, Venkatesh and Davis (2000) then extended the TAM to TAM2 by adding social variables and cognitive instrumental variables that is resulted PEU. Afterward, many researchers consider SNs as the addition to TAM.

Fishbein and Ajzen (1975) defined SN as the extent to which a person might believe and do certain activity based on what the important others do. East (1993) said that it is based on a normative belief of a social nature to influence individual thought to take or not to take a certain action. Social identity and self-categorization theory stated that membership in social groups might define an individual (Choi and Chung, 2013).

The effect of SN as the social influence on users' decision to use new system was proven by Watjatrakul (2013). Even though the effect of SN on PEU was less analyzed, yet, some studies show a significant effect (Baki *et al.*, 2018). The insightful meta-analysis by Schepers and Wetzels (2007) shed some lights on the role of SN on TAM. They found that 91.67% of articles examining SN on PU are significant. As many as 66.67% of articles which test the effect of SN on PEU are also found significant. However, the insignificant effect of SN on TAM was also found in some studies. The significant relationship can be found in Watjatrakul (2013), Teo (2009), Riemenschneider *et al.* (2003), Cheung *et al.* (2002) and Igbaria *et al.* (1997) studies, whereas Samodra and Mariani (2013), Lau *et al.* (2001) and Roberts and Henderson (2000) found it insignificant. Despite the insignificant results, however, the majority of the studies show it another way. It indicates that the link between SN and PU and PEU exists. Therefore, the authors propose the following hypothesis:

H1. Subjective norm affects perceived usefulness.

H2. Subjective norm affects perceived ease of use.

Perceived ease of use and perceived usefulness

User's intention to accept and their behavior to use new system or information technology (IT) can be described and explained by TAM (Hussein, 2017; Bradley, 2012). The model can predict customer behavior in e-commerce activity (Pavlou, 2003), e-government

(Hamid *et al.*, 2016), e-banking (Liébana-Cabanillas *et al.*, 2013), the use of electronic payment (Plouffe *et al.*, 2001; Hanafizadeh *et al.*, 2014) as well as smartphone (Mugo *et al.*, 2017). PEU and PU are the central reason of customer to accept and use new technology (Taherdoost, 2018; Schere *et al.*, 2019), either directly or indirectly (Hussein, 2017).

TAM explained that customers' perception of usefulness toward new technology is mainly affected by its easiness to use. The empirical tests that have been done by prior researches (Lemay *et al.*, 2018; Hamid *et al.*, 2016; Tan *et al.*, 2011; Leng, 2011; Chen *et al.*, 2011) showed a consistent significant effect of PEU on PU. Therefore, the authors hypothesize that in the context of e-money payment mechanism, the easier e-money payment system usage perceived by the customer, the higher the possibility for the customer to perceive it useful. Therefore, the authors built the following hypothesis:

H3. Perceived ease of use affects perceived usefulness.

Subjective norm and intention to use e-money

In TRA, SN is a direct antecedent of behavioral intention (Fishbein and Ajzen, 1975) as well as subsequently in TPB (Ajzen, 1991). After realizing high possibility of social pressure on behavioral intention, Venkatesh and Davis (2000) developed TAM2. In TAM2, SN is set to be the direct and indirect predictor of behavioral intention. The theory was proven empirically by several studies. Samodra and Mariani (2013) found that the willingness to use social media by Indonesian Z generation is significantly affected by SN. SN was found significantly affect behavioral intention in the context of augmented technology Cheung *et al.* (2002) and travel-related behavior (Jing *et al.*, 2019). More specific to e-money context, Ayudya and Wibowo (2018) found SN as a significant predictor of customer willingness to use e-money. However, previous studies also reported insignificant findings (Venkatesh and Davis, 2000). The insignificant findings can be found in Davis *et al.* (1989) in the context of IT.

Nevertheless, Schepers and Wetzels (2007), reported in their meta-analysis, that as many as 86.36% of articles examining SN on behavioral intention in the context of TAM were significant. It indicates that even though the results were inconsistent, yet, majority studies reported significant findings. Therefore, the authors hypothesize the following:

H4. Subjective norm affects customer intention to use e-money.

Perceived ease of use and intention to use e-money

PEU reflects a customer's assessment or perception of a given system in terms of its easiness to operate and learn (Gefen and Straub, 2000). Individuals are more willing to use and learn new system features and end up using it if the system is easy to use (Hamid *et al.*, 2016). In this research context, a person will have a strong INT as a new mode of payment system if it is easy to use and learn. PEU positively affected continuance intention (INT) in Web-based learning context (Chiu and Wang, 2008). Tella and Olasina (2014) found the indirect effect of PEU to INT in the context of e-payment. In a relatively similar context, that is mobile technology, Tan *et al.* (2011) and Kim *et al.* (2010) found PEU is related to behavioral intention to use mobile technology. Further significant effect of PEU on behavioral intention (INT) is also found in the context of electronic commerce transaction (Koufaris, 2002; Gefen *et al.*, 2003; Gapar *et al.*, 2011; Fayad and Paper, 2015; Renko and Popovic, 2015; Yunus *et al.*, 2015). Therefore, the authors hypothesize the following:

H5. Perceived ease of use affects customer intention to use e-money.

Perceived usefulness and intention to use e-money

TAM and TAM2 suggested that PU is a direct antecedent of behavioral intention (Venkatesh and Davis, 2000). It is defined as a person's belief of the new technology objective in improving his/her productivity or performance (Davis *et al.*, 1989). Bhattacharjee (2001) mentioned that even though the customer has bad experience with prior usage of new technology, they will still accept it if they perceived it useful.

Empirically, besides in the context of state-of-the art technology (Pham and Ho, 2015; Park *et al.*, 2014), the positive effect was also found in e-commerce adoption (Gefen, 2002) and other contexts such as e-text, instant messaging, mobile service provider, online travel service, electronic and blog learning and knowledge creation (Baker-Eveleth and Stone, 2015; Wang *et al.*, 2011; Abbas and Hamdy, 2015; Li and Liu, 2014; Lin and Wang, 2012; Tang *et al.*, 2012; Chou *et al.*, 2009). Those findings lead the authors to formulate the following hypothesis:

H6. Perceived usefulness affects customer intention to use e-money.

Moderating role of knowledge about riba

The relationship between SN and INT was found inconsistent in previous studies (Venkatesh and Davis, 2000; Schepers and Wetzels, 2007). Similarly, Munoz-Leiva *et al.* (2017) stated that previous studies resulted in different results when testing PU on behavioral intention (INT) to adopt new technology. It is argued that individual factor might be one of the causes (Schepers and Wetzels, 2007). Knowledge can be one of the individual factors causing inconsistent results on the aforementioned relationship. It is because people are separated in terms of their level of knowledge. Their perception is highly influenced by their level of knowledge. Consumer knowledge is a fundamental concept to understand consumer decision in attitude formation and change as well as adopting new technology (Oh and Abraham, 2016).

Conceptually, knowledge can be categorized into subjective, objective and usage. Subjective knowledge is the knowledge that is rooted from people perception, whereas objective knowledge is a factual-based knowledge, and usage knowledge is a knowledge that is gained from prior experience (Aji, 2017; Oh and Abraham, 2016).

Users' behavioral intention to accept and adopt e-money as a new mode of payment is contingent on their level of KR. It is the key construct in consumer behavior (Jing *et al.*, 2019; Haron, 2015). In another context, knowledge highly affected consumers' decision-making (Phau *et al.*, 2008) and purchase intention (Laroche *et al.*, 2010). Consumers who are less knowledgable will tend to trust on practical usage in purchase decision-making, neglecting other factors – such as the true fact about the product (Laroche *et al.*, 2010). In this research context, it is hypothesized that users' KR has possibility to change customers' willingness in using e-money, even though they perceive it as useful and/or easy to use.

H7a. The effect of subjective norm on customer intention to use e-money is moderated by users' knowledge about riba.

H7b. The effect of perceived ease of use on customer intention to use e-money is moderated by users' knowledge about riba.

H7c. The effect of perceived usefulness on customer intention to use e-money is moderated by users' knowledge about riba.

Research methods

The questionnaires were distributed online powered by Microsoft Form by using convenience sampling technique. It enables researchers to access available respondents efficiently (Dörnyei, 2007). This study adapts TAM scales from Davis *et al.* (1989), Moore and Benbasat (1991), Venkatesh and Davis (2000) and Morris *et al.* (2005). SN is measured by four items taken from Ajzen (1991) by adjusting the context to e-money. The measurement items for KR are extracted from the Quran and the hadith. Complete items can be seen in Table 3, and the research model can be seen in Figure 1. All items are evaluated using the five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree.

Validity and reliability tests are conducted using IBM SPSS version 23 before the full model is examined. The first one is done by dimension reduction technique. It is valid if all items converge in the specified factors confirming the theory. This study eliminated items scored below 0.60 (Hair *et al.*, 2006), and that do not group in a specified factor. Cronbach's alpha and composite reliability score are used to determine items reliability. Nunnally (1978) said that 0.70 is the cut-off for reliable items.

The Structural Equation Modeling (SEM) method is implemented to test the full model using AMOS software, including the interaction moderation test. To ensure a good model fit and results, measurement and structural tests need to be done. The model goodness-of-fit (GoF) is reviewed based on the criteria taken from Hooper *et al.* (2008), and summarized in Table 1. If the GoF score is inadequate, the model tenability relationship is rejected (Byrne, 2016). Interaction test is conducted following Baron and Kenny's (1986) approach. KR is interacted by the predictors PU, PEU and SN to INT. The effect of moderation can be seen if there is a significant effect of the interaction variables on the endogenous or dependent variable, while other variables are controlled.

Results

In total, this study collected 253 responses. A 100% response rate was achieved because, by online questionnaire form, all question can be set "required." Respondents could not submit

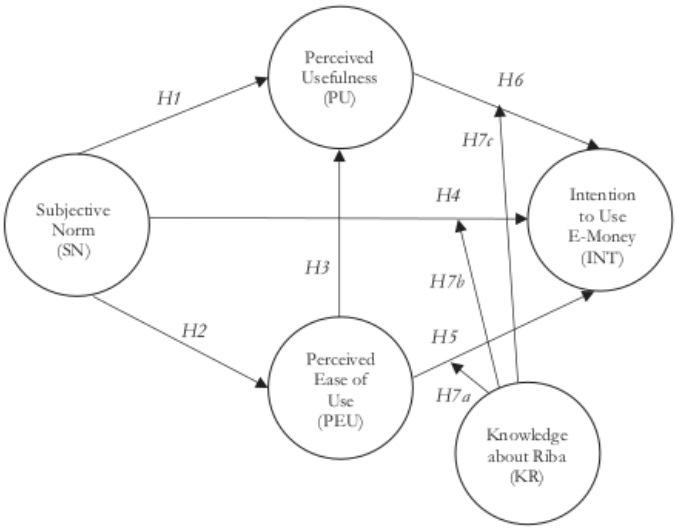

Figure 1.
Research model

unless all of the questions were responded. The respondents vary in terms of descriptive variables. Male respondents are still dominant (52.6%) over the female (47.4%). The majority of respondents are aged between 17 and 41 years (65.6%) and had finished undergraduate study (49.8%). Moreover, this study attracted more student respondents (47.4%) than the other occupations. The complete data can be seen in Table 2.

Measurement model – confirmatory factor analysis

This study uses both factor analysis and confirmatory factor analysis (CFA) to test the measurement model. Both tests are aimed to examine items and model validity and reliability. All items' loading score in this study is greater than 0.60 and loaded in

Table 1. Rule of thumbs for goodness-of-fit (GoF) of the model

No.	Criteria	Threshold	Rule of thumb
1	CMIN/DF	<2.00	Good
		<5.00	Acceptable
2	GFI	>0.95*	Great
3	AGFI	>0.90	Good
4	RMSEA	<0.06	Good
		0.05-0.10	Fair
		>0.10	Poor
5	NFI	>0.95	Great
		>0.90	Good
6	CFI	>0.95	Great
		>0.90	Good

Notes: *Depends on the factor loadings and sample sizes. The lower the sample sizes, the greater the GFI

Table 2. Descriptive respondents

Variable	Description	No.	(%)
Gender	Male	133	52.6
	Female	120	47.4
Age	<17 years old	2	0.8
	17–25 years old	119	47.0
	34–41 years old	47	18.6
	34–41 years old	27	10.7
	>42 years old	58	22.9
Occupation	Students	120	47.4
	Employee at private companies	40	15.8
	Civil servant	17	6.7
	Entrepreneur	16	6.3
	Lecturer	49	19.4
	Housewife	7	2.8
	Employee at state-owned corporations	4	1.6
Education	Junior high or lower	1	0.4
	Senior high	43	17.0
	Undergraduate	126	49.8
	Master	68	26.9
	Doctoral	15	5.9

specified factors. Therefore, the items are valid (Hair *et al.*, 2006). In CFA, the convergence validity is examined by evaluating the average variance extracted (AVE) score. All items in this study are free from convergence validity issue because the AVE score is greater than 0.50 (Bagozzi and Yi, 1988). Table 3 summarizes the measurement model test results.

In addition, the model GoF is evaluated by certain indicators as mentioned in Table 1. CMIN/DF score of this model is 1.47 (<2.00) which means good, GFI score is 0.92 which is also good, AGFI score is 0.89 which is nearly good, RMSEA score is 0.04 which is good, NFI and CFI score are 0.94 and 0.98, respectively, indicating great GoF model. Overall, all of the scores suggest that the GoF of the model is good (Hooper *et al.*, 2008; Hair *et al.*, 2006, p. 654).

Code	Variables	Loadings	KMO Bartlett	Cronbach's α	Composite reliability	AVE
	Subjective norm		0.871	0.824	0.816	0.529
SN1	Majority of people I know use e-money	0.808				
SN2	Important people in my live e-money	0.766				
SN3	Majority of people I know would agree if I use e-money	0.740				
SN4	Majority people I know think that I should use e-money	0.761				
	Knowledge about riba			0.895	0.896	0.686
KR1	Additional money required in debt transaction is considered as riba	0.861				
KR2	Any advantages in debt transaction are considered as riba	0.816				
KR3	Additional charge when the deadline payment is due considered as riba	0.910				
KR4	Fine or penalty in installment transaction is considered as riba	0.896				
	Perceived usefulness			0.903	0.906	0.708
PU1	E-money helps payment transaction faster	0.697				
PU2	E-money helps to improve quality in payment transaction	0.851				
PU3	E-money helps to improve productivity in payment transaction	0.857				
PU4	E-money helps to improve effectivity in payment transaction	0.794				
	Perceived ease of use			0.903	0.897	0.635
PEU1	Learn to use e-money is easy	0.826				
PEU2	Skillful to use e-money is easy	0.831				
PEU3	Finding information about the advantage of e-money is easy	0.741				
PEU4	Using e-money is easy	0.806				
PEU5	The use of e-money is clear and understandable	0.784				
	Intention to use e-money			0.884	0.886	0.796
INT1	I intend to use e-money	0.811				
INT2	I intend to routinely use e-money	0.823				

Notes: Extraction method: principal component analysis; rotation method: varimax with Kaiser normalization

Table 3. Measurement model indicators

Structural model

The GoF of the structural model is also assessed by similar indicators as the measurement model. The CMIN/DF, GFI, AGFI, RMSEA, NFI and CFI scores for the structural model are 2.85, 0.98, 0.90, 0.08, 0.97 and 0.98, respectively. The results concluded that the structural model is fit (Hooper *et al.*, 2008; Hair *et al.*, 2006, p. 654).

The proposed hypothesis between SN and PU stated in *H1* is statistically proven significant as the β score is 0.24 (p-value < 0.01). Therefore, *H1* is supported. Similarly, *H2* which proposes the relationship between SN and PEU is also supported, because the β score is 0.49 significant at p-value < 0.01. Statistical test also shows that the paths PEU and PU are positively significant ($\beta = 0.58$, p-value < 0.01), thereby supporting *H3*. All of the path directed to INT are found significant except for PEU. The effect of PEU on INT is not significant because the β score is 0.05 at p-value = 0.32 (>0.05). Thus, from the test, *H4* and *H6* are supported, whereas *H5* is not supported.

Interestingly, not all of the moderation hypotheses are supported. *H7a* and *H7b*, which state that KR moderates the link between PEU and INT, are not supported ($\beta = 0.11$, p-value = 0.30 > 0.05). On the other hand, *H7c* is supported because β score = −0.12, at p-value < 0.01. It indicates that users' KR can turn the positive INT, or in short, KR significantly intersects or moderates the relationship. The complete structural model with the path analysis score is presented in Figure 2 and Table 4.

Discussion

From all nine hypotheses, six of them are supported and three (*H5*, *H7a* and *H7b*) are not. The results prove that SN significantly affects customers' perception of PEU and PU. It can also imply that important others play a significant role in forming individual perception, lending support for Watjatrakul (2013), Teo (2009), Riemenschneider *et al.* (2003), Cheung *et al.* (2002) and Igbaria *et al.* (1997). The significant effect between SN and INT also gives an insight and proves that people's willingness to use e-money as a new mode of payment

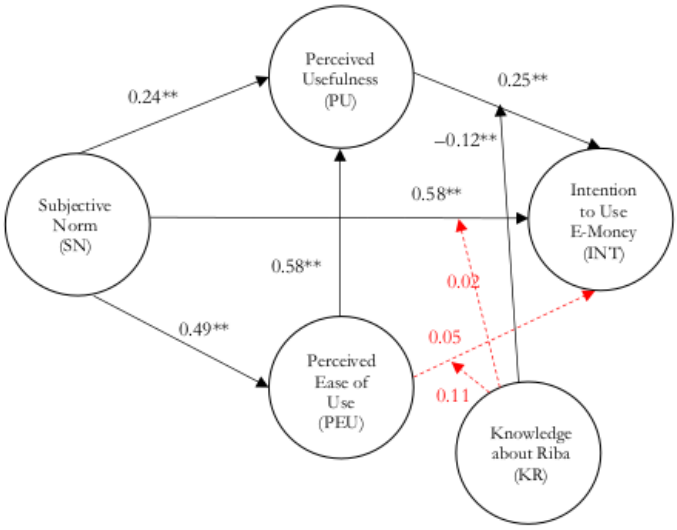

Figure 2.
Structural model test

Note: **Significant at p-value < 0.01

Hypotheses	Path effect	β	Conclusion
H1	Subjective norm (SN) → Perceived usefulness (PU)	0.24**	Supported
H2	Subjective norm (SN) → Perceived ease of use (PEU)	0.49**	Supported
H3	Perceived ease of use (PEU) → Perceived usefulness (PU)	0.58**	Supported
H4	Subjective norm (SN) → Intention to use e-money (INT)	0.58**	Supported
H5	Perceived ease of use (PEU) → Intention to use e-money (INT)	0.05	Unsupported
H6	Perceived usefulness (PU) → Intention to use e-money (INT)	0.25**	Supported
H7a	Knowledge × Perceived ease of use → Intention to use e-money	0.11	Unsupported
H7b	Knowledge × Subjective norm → Intention to use e-money	0.02	Unsupported
H7c	Knowledge × Perceived usefulness → Intention to use e-money	−0.12**	Supported

Note: **Significant at p-value < 0.01

Table 4. Structural model results

transaction (INT) is highly influenced by their peers. It supports Ayudya and Wibowo (2018) in a similar context, Jing *et al.* (2019) in travel behavior context and Samodra and Mariani (2013) in the context of social media usage. More importantly, this result contributes to the literature by supporting TAM2 as developed by Venkatesh and Davis (2000).

The result also suggests that users' perception on e-money usefulness (PU) is also strongly affected by PEU, confirming prior study's results (Lemay *et al.*, 2018; Hamid *et al.*, 2016; Tan *et al.*, 2011; Leng, 2011; Chen *et al.*, 2011). A more interesting finding results from *H5* testing in which there is no significant effect between PEU and INT. It means that e-money effortless system usage does not directly influence the user to accept and adopt it. However, the finding also suggests that the effect of PEU on INT is indirect, mediated by PU. It conforms with Ma and Liu (2004) and Money and Turner (2005) who stated that the effect of PEU on users' technology acceptance is significant through PU. The easiness in using e-money alone is useless unless it gives users a significant value. This might happen because, in Indonesia, there are several e-money providers giving relatively similar feature or interface that is easy to use. Yet, only one or two operators owned the biggest market share because of its wide connection to industry players. Go-Pay and OVO become the two biggest server-based e-money in Indonesia (Dailysocial, 2017). It is because both connected widely to online food and transportation services. The latter had already partnered with Grab, the second biggest online transport platform in Indonesia. Many merchants and drivers were registered in Go-Jek (Go-Pay) and Grab (OVO) system or database; therefore, it is plausible that users perceive that using e-money from both providers is more useful than the other e-money providers.

KR is found to negatively moderate the relationship between PU and INT. This finding is in line with Oh and Abraham (2016), Phau *et al.* (2008) and Laroche *et al.* (2010) who also found it in the context of consumer decision-making, attitude and intention to adopt new technology. Knowledge can be the individual factor Schepers and Wetzels (2007) suggested as the possible reason for inconsistent findings between PU and INT. This study found that KR negatively moderates PU-INT relationship. It implies that even though e-money is found usefull, but, consumers might not interested to use it when they acknowledged riba in e-money system. Thus, it might become the barriers for government's cashless society program.

On the other hand, KR does not significantly moderate SN-INT relationship. It can be understood from this finding that important others might cancel users' individual understanding or KR in the e-money business model. Their belief in their own knowledge possibly is not as strong as their belief in the important others. It can happen because riba

ruling or "fatwa" on e-money system still becomes a hot debate among Muslim scholars in Indonesia. It resulted in public confusion. Consequently, they will tend to follow what others are doing.

This study has a limitation in terms of the sample that are mainly dominated by students. Students' perception might be different from practitioners'. Therefore, it is highly suggested to add more sample from non-student respondents for next research agenda. Future research is also suggested to consider Muslim religiosity in a structural model. Previous research in the context of halal foods reported a significant result of religiosity on intention to purchase. It will be interesting if the context is extended to e-money usage intention. The multi-group analysis is also encouraged by dividing consumers' KR into the low and high group. It can give more insightful information regarding the moderation effect.

Managerial implication

Considering the results, this research offers some implications that might be beneficial for policymakers. The results show that users' KR significantly weakens the INT. Neglecting this fact will harm the ecosystem of Islamic financial service, the GNNT as well as the financial inclusion program initiated by the government through its Financial Service Authority (OJK).

Public, especially those who are Muslims, are getting aware of riba. They are also more likely to believe and act toward something in accordance with the behavior of important others, as proved by this study. Accordingly, the government should develop and regulate a more *Sharia*-compliant business model for e-money. Afterward, the public must be informed and educated.

Finally, given the fact that the chip-based e-money products in Indonesia are owned by conventional banks, it is going to be a wise idea if the government can partner up with the Islamic banks to design and develop the *Sharia*-compliant e-money. The National Sharia Council (DSN-MUI) should also be involved.

Conclusion

This research highlighted the effects of SN and KR or usury on behavioral INT in Indonesia. Overall, it can be concluded that SN significantly affects PEU, PU and INT. Another finding also revealed that the relationship between PU and INT is moderated by KR. The effect does not exist in SN-INT and PEU-INT relationships.

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