



Information Communication Technology Acceptance and Use by Yemeni Microfinance Employees

Dr. Abdo Ali Homaid

College of Science and Humanities, Shaqra, Shaqra University, Saudi Arabia

a3hd2000@yahoo.com

ABSTRACT

Microfinance is regarded as a powerful and effective tool for fighting and eradicating poverty across the world. Due to the crucial role of Information Communication Technology (ICT) in fostering microfinance Institutions (MFIs) to be more efficient and effective, understanding the factors influencing the acceptance and use of ICT by MFIs employees is a serious issue. Thus, this study aims at exploring the factors influencing the acceptance and usage of ICT among microfinance employees in Yemen by applying Technology Acceptance Model (TAM) as an underpinning model. It has been extended by the inclusion of self-efficacy and training to create an applicable technology acceptance model to the unique microfinance industry and similar ones. It employed the quantitative method distributing a survey questionnaire to MFIs employees and collected a total of 276 usable questionnaires for the final analysis. The partial least square structural equation modeling PLS 3.2.8 was utilized for testing measurement and structural models. The findings revealed that perceived usefulness, perceived ease of use and self-efficacy are significant variables that affect behavior intention of microfinance employees to accept and use ICT. Moreover, training is proven to be a significant predictor of perceived usefulness, perceived ease of use, self-efficacy and behavior intention. More importantly, the findings show that behavior intention is the most prominent predictor influencing use behavior among the study hypothesized relationships. This study contributes significantly to the body of knowledge in the area of information technology as it validates the results of the previous studies in an infant and unique industry like microfinance. It also assists the MFIs management and other stakeholders in making proper interventions and designing appropriate strategies that result in MFIs sustainability and better living standards for the poor.

Keywords: *S ICT, TAM, MFIs Employees, Yemen.*

1. INTRODUCTION

The Microfinance is a provision of a wide range of financial services including loans to poor and low income people by which they can establish their own businesses

and increase their living standards (Al-Awlaqi & Aamer, 2019). It has acquired an international recognition to be a dynamic strategy for fighting poverty by serving the clients who are not served by the commercial banking system (Ledgerwood, Earne, & Nelson, 2013; Mersland & Strøm, 2014; Boateng, Boateng & Bampoe, 2015; Zhang, 2017; Khanam, Mohiuddin, Hoque, & Weber, 2018; Ben Abdelkader & Mansouri, 2019). More importantly, the effects of microfinance are not limited to individual levels as when the access to goods and services is increased among microfinance customers, it will affect the whole business chain and enhance economic development (Isangula, 2012). Therefore, it could help millions of the poor to be out of poverty (Microcredit Summit Campaign, 2009; Mehrotra, 2014). To meet the national and development goals, they create new jobs, support start-up businesses, help existing businesses to grow and diversify their core activities and empower women and other minor communities (Pakdel & Monroy, 2010). In a nutshell, microfinance is the banking for the poor which provides a variety of services to poor and low-income people engaged in livelihood and microenterprise activities.

Currently, the implementation of Information Communication Technology (ICT) is a continuously growing phenomenon in all organizations and regarded as a primary asset if not the most significant strategic one. Technology applications help these organizations to reduce inefficiencies and errors in almost all aspects of the organizations' operations and corporate strategies. Therefore, the need to accept and utilize technologies has drastically increased to achieve efficiencies, coordination, and communication (Abdullahi, Shehu, & Usman, 2019; Laudon & Laudon, 2011). One of the main trends of research in the field of Information System (IS) is the explanation and prediction of ICT acceptance and usage. According to Agarwal (1999) acquiring appropriate and sophisticated Information Technology (IT) is crucial, however, it becomes meaningless if not utilized in the

business operations effectively and efficiently. Therefore, it is argued that the success of new innovations adoption depends mainly on the individuals' acceptance to use such technologies (Davis, 1989; Venkatesh & Davis, 1996).

According to Nath, Bhal, & Kapoor (2013), financial services providers, particularly banking sector, rely heavily on IT for its growth and development. MFIs have tended to obtain new technologies in order to join the progress done by formal banks and gain the same advantages (Kauffman & Riggins, 2012). According to Iyengar, Quadri, & Singh (2010), the use of ICT by MFIs is a prerequisite and important driver in the maturing microfinance industry. However, the acceptance and use of these technologies by microfinance employees is still a serious issue (Kauffman & Riggins, 2012). They also stated that they may resist using them due to unfamiliarity with such technologies or the lack of knowledge and skills required for using. This makes the work environment stressful which in turn affects their productivity negatively. Many issues are behind that situation such as the lack of awareness of the ICT's benefits, the complexity of ICT, absence of intention to utilize such innovations in the work place and lack of both training and self-efficacy. Thus, studying the determinants of acceptance and use of ICT among microfinance employees is urgent to fill the gap in the literature.

In Yemen, MFIs have become more competitive to achieve sustainability due to the increase in microfinance commercialization markets and its related activities (Abdel Baki, Zain, & Cordier, 2010). However, one of the most constraints in reaching this objective is MFIs institutional and staff capacity building, particularly new ones due to lack of sufficient Information Technology (IT) systems (International Finance Corporation, 2007). Therefore, the government represented by the Social Fund for Development provided IT applications such as automated accounting System to help in building the capacity of MFIs in Yemen. The Small and Medium Enterprises Development unit also has built an automated system to handle administrative affairs (Mansour, 2011).

Although there is a copious research in the area of IT acceptance in developed and developing countries that have addressed different issues related to this area, there is a few conducted in the least developed countries including Yemen (Korpelainen, 2011). Faaeq, Ismail, Osman, Al-Swidi, & Faieq, (2013) suggested that examining new innovations such as ITC in Middle East area as the acceptance and use of ITC may vary due to different issues related to culture, economy and politics. Furthermore, examining the determinants of ICT acceptance and use by microfinance employees is neglected (Braun & Waller, 2004; Kauffman & Riggins, 2012). Moreover, it is argued that although empirical studies in the field of IT have realized the difference between mandatory and voluntary usage of technology,

there are a few studies carried out in the mandatory situation (Chan et al., 2010). In addition, previous studies have not given due attention to training as an essential factor affecting ICT acceptance and use. Thus, it is needed to conduct a research in ICT acceptance, utilization and factors affecting the employee's acceptance and usage amongst MFIs employees. Therefore, an important questions rise here which are:

- 1) what are the factors enable or inhibit the acceptance and use of ICT by microfinance employees?
- 2) what are the most significant factors affecting the acceptance and use of ICT by microfinance employees?
- 3) how can training and self efficacy affect ICT acceptance and use in microfinance sector?

It attempts to answer these questions using Technology Acceptance Model (TAM) model as the guiding model. It is extended by including two additional factors namely, self-efficacy and training, which might bring new knowledge to IT literature. The combinations of these factors would increase the acceptance and use of ICT among microfinance employees which improve the MFIs performance and affect the millions of poor people's lives over the world.

2. LITERATURE REVIEW

2.1 ICT Definition

Information Communication Technology (ICT) refers to technologies that provide access to information through telecommunications. Beckinsale & Ram (2006) defined ICT as "any technology used to support information gathering, processing, distribution and use". ICTs can be viewed as all form of technologies and product for a wide range of software, hardware, telecommunications and information management techniques, applications and devices. They are used to create, produce, analyse, process, package, distribute, retrieve, store and transmit or receive information electronically in a digital form such as computers, email, internet, websites, social networking and other wireless communications devices, networks, broadband, and as well as the various specialized devices and applications associated with them, such as satellite systems and videoconferencing (Onn & Sorooshian, 2013; Nicol, 2003). According to Oye, Iahad, & Rahim (2012), ICT can be seen as a term that covers any communication devices or application comprising: radio, cellular phones, hardware and software, computer and network, satellite etc.

2.1 TAM and Hypotheses Development

The issue of understanding the predictors of acceptance and use new technologies has attracted the attentions of academicians during the last decades. Technology Acceptance Model (TAM) is regarded as one of the most widely applied model for explaining the IT users' intention and actual behaviour (Korpelainen, 2011; Marangunić & Granić, 2015). It was originated and developed mainly to explain technology acceptance and use behaviour (Davis, 1989). It was an adaptation of the Theory of Reasoned Action and the Theory of Planned Behaviour (Ajzen & Fishbein, 1980) and Ajzen (1991). It is also proved to be robustly reliable that has achieved a high predictive model power of computer technology use (King & He, 2006; Sharma & Chandel, 2013). It has provided a significant theoretical contribution to the IT literature (Chin & Li, 2011). TAM proposed that perceived usefulness (PU) and perceived ease of use (PE) are the fundamental determinants of technology use in organizations. Davis (1989) defined PU as “the degree to which a person believes that using a particular system would enhance his or her job performance” and defined PE as “the degree to which a person believes that using a particular system would be free of effort”.

The research works have been dedicated to extend TAM by examining the predictors of the two main constructs of TAM (PU and PE). According to Venkatesh & Davis (2000), obtaining a deeper and better knowledge about them would help organizations to design appropriate strategies to enhance the acceptance of new technologies. Based on the view of TAM, PE influences both PU and user's attitude towards technology. On the other hand, PU influences both the user's attitude towards technology and user's Behavioral Intention (BI). The user's attitude towards technology influences the user's BI favorably which in turn influences the user to Use Behavior (UB). It suggests that the combination of these factors increase the IT use amongst end-users and the intentions to use a certain technology results in making the decision whether they will use it or reject it.

However, later the attitude variable was eliminated from TAM models due to its weaknesses as a mediator (Davis Bagozzi, & Warshaw, 1992; Mun, Joyce, Jae & Janice, 2006; Venkatesh & Davis, 2000). It is also argued that the inclusion of attitude to TAM models is not necessary when applied in a mandatory use (Rondan-Cataluña, Arenas-Gaitán & Ramírez-Correa, 2015). Moreover, TAM has ignored other important variables that affect technology users' behavior though the wide usage of TAM and its popularity in IS discipline, (Bogozzi, 2007). The inclusion of other variables to the model is an advantageous in order to obtain more understanding regarding the determinants of IT users' acceptance and use (Faaeq et al., 2013; Venkatesh & Davis, 2000). Thus,

this study dropped it from the model to follow such trend and extended the TAM model by including two variables self-efficacy (SE) and Training (TR). The study model is depicted in Figure 1 below.

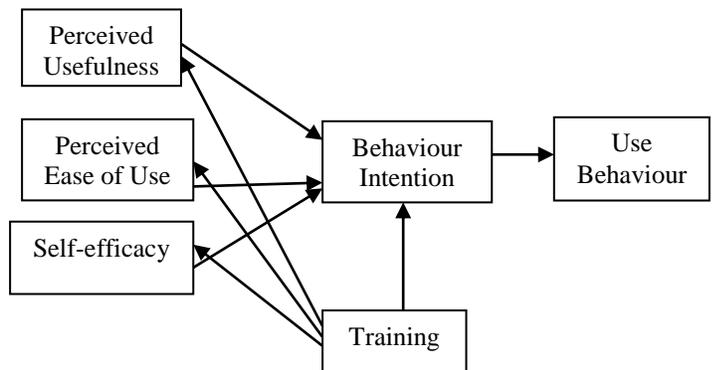


Fig. 1. Study Model

2.1.1 Core Technology Acceptance factors

As explained earlier, TAM suggests that BI is significantly determined by two essential beliefs (i.e PU and PE) and consequently BI affects the actual use of the technology. When users believe that advantages of a new technology assist them in the enhancement of their productivity and job performance or its easiness to use, their intentions become higher for the acceptance and use of such technology. The significant effects among these relationships were empirically proven by considerable previous researches (Davis, 1989, Davis, Bagozzi, & Warshaw, 1989; Davis et al., 1992; Venkatesh and Davis, 2000). A study by Mun & Hwang (2003) found that both PU and PE are significantly associated with BI and then BI affects significantly the UB of students towards the blackboard system in USA. A more recent study carried out by To, Lee, & Lam (2018) concluded that both PU and PE are significantly associated with BI of building professionals to use smart and sustainable building technologies in China. In the context of using core banking system by employees, Nath et al. (2013) confirmed that PU has a significant effect on the BI and consequently BI influences the UB of Indian bank employees to core banking systems. They also confirmed that BI is significantly related to their UB. This study postulates the following hypotheses:

- H1: PU affects significantly BI of microfinance employees to use ICT.
- H2: PE affects significantly BI of microfinance employees to use ICT.
- H3: BI affects significantly UB of microfinance employees to use ICT.

2.1.2 Self-efficacy

It can be defined as a user's belief about his or her ability to utilize new technologies in achieving a task, rather than reflecting simple skills (Compeau & Higgins, 1995). It is believed that the higher self-efficacy perceived by IT users, the more active and longer they continue to use new technologies to accomplish the assigned tasks. Empirical studies concluded that SE is an influential factor affecting BI of IT users in different IT contexts. For example, Lam, Cho & Ou (2007) found that SE is the most important factor affecting the BI of employees to adopt IT in the hospitality sector. Another study conducted by Tarhini, Al-Badi, Almajali, & Alrabayaah (2017) revealed that there is a significant link between SE and BI of the employees of hotels in Jordan to use cloud computing. Furthermore, the results of the study of Oye et al. (2012) showed that SE has a significant effect on the BI of the academic staff of University of Port Harcourt in Nigeria to accept and use ICT in the teaching and learning processes. However, Little researches have examined the effect of SE and BI of employees in the microfinance sector. Thus, the hypothesis is suggested as follow:
H4 SE affects significantly BI of microfinance employees to use ICT.

2.1.3 Training

Yusuf, Gunasekaran, & Abthorpe (2004) defined training (TR) in the context of enterprise resource planning (ERP) systems as the activity through which both managers and employees obtain comprehensive concepts of the ERP system. While Igbaria, Zinatelli, Cragg, & Cavaye (1997) defined training (TR) in the context of personal computing acceptance as the process of providing tutorial materials on IT. The significance of TR for the success of IT system use has been widely proved (Agarwal, Sambamurthy, & Stair, 2000). This is because TR builds an individual's ability to use and increase his/her positive feeling towards IT system and indirectly his/her acceptance of IT applications (Compeau, Higgins, & Huff, 1999). It also reduces the anxiety and stress among employees and increases the awareness of the ERP system advantages to accomplish the assigned tasks (Lee, Lee, Olson, & Chung, 2010). On the other hand, empirical studies reported that TR is significantly associated with PU (Agarwal & Prasad, 1999) and PE (Igbaria, Parasuraman, & Baroudi, 1996; Amoako-Gyampah & Salam, 2004). It is also reported that TR is significantly associated with PU of ERP users to improve financial performance of firms in Saudi Arabia (Bazhair & Sandhu, 2015). Moreover, it is found that TR has significant effects on both PU and PE (Giovanni, Mariani, Curcuruto, & Gaetani, 2013; Lundu & Shale, 2015; Rajan & Baral, 2015). Previous studies also showed that the more sufficient training provided to individuals when using

new innovations, the higher self-efficacy towards such innovations (Compeau & Higgins, 1995; Igbaria et al., 1997; Jeon & Park, 2015). Additionally, it is argued that TR has a direct and significant effect on BI to use e-government adoption based on the data collected from Iraqi employees (Ibrahim & Zakaria, 2016). However, the study of Aggelidis & Chatzoglou (2009) found that TR had only an indirect effect on BI of public hospital employees to accept and use hospital information system. The inconsistent findings indicate the need to examine this relationship for more generalization. Therefore, it is suggested that when an individual finds difficulties in using certain technologies such as ICT, it is likely that TR may make the use of ICT easy, rise the understanding of ICT benefits, improve the self-efficacy of users towards technology and enhance their behavior intention to use ICT. In line with this, the following hypotheses are presented as follow:

- H5 TR affects significantly PU of microfinance employees to use ICT.
- H6 TR affects significantly PE of microfinance employees to use ICT.
- H7 TR affects significantly SE of microfinance employees to use ICT.
- H8 TR affects significantly BI of microfinance employees to use ICT

3. RESEARCH METHODOLOGY

3.1 Data Collection and Measurements

The current study used a cross-sectional survey where self-administered questionnaire was developed and distributed randomly to the target respondents with the help of a research assistant. They are the employees of the 16 microfinance institutions, which are the members of the Yemen microfinance network. The employees of Al-Amal Microfinance bank have also been included as it is the biggest provider for microfinance services in Yemen. A pretest was performed to ensure the clarity of the questionnaire's contents. Moreover, pilot test were employed to establish the reliability and validity of the instruments based on the data collected from 50 employees of microfinance. The questionnaire is divided into two main parts where the first part comprises questions about the personal information of the respondents while the second part includes questions about their perception regarding the study constructs. The data collection process yielded 276 usable questionnaire for the final data analysis after distributing a total of 400 questionnaires to the microfinance employees. The five likert scale was used where they were asked to select the appropriate choice based on their agreement or disagreement (1= strongly disagree and 5= strongly agree).

The study measurements were adapted from the prior researches of IT acceptance and use. Specifically, The measurements of PU, PE, BI and UB were extracted from the research works of Davis (1989), Ajzen (1991) and Yi & Davis (2001). While the measurements of the factors such as self-efficacy and training were derived from Compeau & Higgins (1995) and Venkatesh & Davis (1996) respectively. The respondents' characteristics are shown in Tale 1 below.

Table 1: Respondents' demographic profile (N=276)

	Category	Frequenc y	%
Gender	Male	211	76
	Female	65	24
Age	20-29	48	17
	30-39	183	66
	40-50	26	10
	More than 50	19	7
Position	Branch Manager	22	8
	Supervisor	60	22
	Customer Service Officer	83	30
	Loan Officer	111	40
ICT Experience	Less than 1 year	14	5
	1-2 years	29	10
	2-3 years	33	12
	3-4 years	44	16
	5 years and above	156	57

were deleted from the model because of their low loadings. Table 2 below shows the item loading values which indicates the goodness of indicator reliability.

On the other hand, Peterson & Kim (2013) stated that Cronbach's alpha and composite reliability (CR) criterion are the most widely used for testing the internal consistency reliability. Table 2 shows that the internal consistency reliability was verified as the values of the two criterion are greater than the cut-off point value (higher than 0.70) based on the suggestions of Tenenhaus, Esposito, Chatelin & Lauro (2005), Hair et al. (2011) and Valerie (2012). Similarly, Table 2 reveals the results of convergent validity where the average variance extracted (AVE) values of each variable in the study model was greater than 0.50 meeting the benchmark of Hair et al. (2017).

Last but not least, this study utilized the criterion of Fornell-Larcker criterion (1981) based on the average variance extracted (AVE) to verify discriminant validity of the measurement model. It is required to compare the square root of every AVE value of each variable with the correlation among any pair of variables. Table 3 shows that the square root of the AVE were greater than the correlation of other constructs which assures that the items of each construct explain more variance than the other ones of other constructs. Thus, it can be claimed that discriminant validity was confirmed. Based on the previous tests, the goodness of measurement model was assured.

4. DATA ANALYSIS

This study employed The Statistical Package for Social Science (SPSS) version 21 and smart Partial Least Square Structural Equation Modeling (PLS-SEM) version 3.2.8. SPSS was employed for the inferential analysis while PLS-SEM was used for the quality model establishment by adopting the two-stages approach namely the measurement model and structural model evaluations based on the suggestions of (Henseler, Ringle, & Sinkovics, 2009; Hair, Sarstedt, Ringle & Mena, 2012; Hair, Hult, Ringle, & Sarstedt, 2017). The next section presents the quality model test.

4.1 Measurement Model

In order to confirm the reliability and validity of the measurement model, it is suggested to test indicator reliability, internal consistency reliability, convergent validity and discriminant validity of the measures (Hair et al. (2017), Hair, Ringle, & Sarstedt (2011) and Henseler et al. (2009). It is recommended that the items loading should be higher than 0.70 and the ones which are less than 0.70 should be deleted from the model as a main condition for the adequacy of indicator reliability (Hair et al., 2011; Hair et al., 2017; Valerie, 2012). Following such recommendation, the items of PU4, PE2, SE5 TR5

Table 2: The Result of Reliability and Validity

Items	Loadings	Cronbach's Alpha	CR	AVE
BI1	0.900	0.817	0.891	0.731
BI2	0.832			
BI3	0.831			
PE1	0.710	0.737	0.847	0.651
PE3	0.828			
PE4	0.874			
PU1	0.951	0.939	0.961	0.891
PU2	0.935			
PU3	0.945			
SE1	0.768	0.825	0.883	0.654
SE2	0.893			
SE3	0.842			
SE4	0.722			
TR1	0.904	0.908	0.936	0.785
TR2	0.932			
TR3	0.823			
TR4	0.882			
UB1	0.882	0.853	0.911	0.773
UB2	0.894			
UB3	0.862			

Table 3: Correlation and Discriminant Validity

	BI	PE	PU	SE	TR	UB
BI	0.855					
PE	0.769	0.807				
PU	0.669	0.683	0.944			
SE	0.395	0.305	0.141	0.809		
TR	0.436	0.409	0.242	0.266	0.886	
UB	0.607	0.726	0.722	0.177	0.316	0.879

4.2 Structural Model

Among the most important criteria for evaluating the quality of the structural model in the PLS-SEM is the R² value (Valerie, 2012). It refers to the variance in the dependent variables that can be explained by one or more independent variables (Hair, Black, Babin, & Andersen, 2010). The outcomes of the PLS-SEM analysis reveals that the R² value of BI, PU, PE, SE and UB of microfinance employees are 0.678, 0.059, 0.167, 0.071 and 0.368 respectively. This indicates that % 67.8 of the variance in the BI of microfinance employees by PU, PE, SE and TR. Similarly, 5.9%, 16.7% and 7.1% of the variances in the PU, PE and SE of microfinance employees are explained by TR. The results presented in Table 4 show that 36.8% of the variance in the UB of microfinance employees is explained by BI. Cohen (2013) stated that 0.26, 0.13 and 0.02 R² score are considered to be substantial, moderate, and weak respectively. Following this criterion, all the R² values of the endogenous latent variables of the study are in the substantial and moderate category.

According to Fornell & Cha (1994) and Hair et al. (2017), the predictive relevance (Q²) adequacy, another criterion used for evaluating the structural model, can be confirmed only when the cross redundancy value is higher than zero. Table 4 also shows that the Q² values of all the endogenous latent variables of the study are greater than zero.

Table 4: R² Value and Q² Value

Endogenous latent variables	R ² Value	Cross-Validated Redundancy
BI	0.678	0.441
PU	0.059	0.046
PE	0.167	0.090
SE	0.071	0.032
UB	0.368	0.264

In order to test the significance level of the path coefficient among the study variables, the PLS

Bootstrapping algorithm was run. The bootstrapping results depicted in Table 5 show that PU is significantly affecting the BI ($\beta = 0.301, t = 3.260, p < 0.01$), thus H1 is supported. Likewise, PE was significantly affecting the BI ($\beta = 0.455, t = 5.403, p < 0.001$), hence H2 is confirmed. More importantly, it is found that BI is the most significant factor among the hypothesized paths of the study influencing the UB ($\beta = 0.607, t = 7.827, p < 0.001$), therefore it can be concluded that H3 is supported. The effect of SE on the BI is also significantly proven ($\beta = 0.179, t = 2.672, p < 0.01$) indicating that H4 is established. Lastly and more importantly, the results reveal that TR has a significant influence on PU ($\beta = 0.242, t = 2.327, p < 0.05$), PE ($\beta = 0.409, t = 4.650, p < 0.001$), SE ($\beta = 0.266, t = 2.149, p < 0.05$) and BI ($\beta = 0.130, t = 2.108, p < 0.05$) of microfinance employees to use ICT. Thus, H5, H6, H7 and H8 are supported respectively.

Table 5: Hypothesized Relationship Results

No.	Paths	Path coefficient	STDEV	T Value	P Value
H1	PU -> BI	0.301	0.092	3.260	0.001
H2	PE -> BI	0.455	0.084	5.403	0.000
H3	BI -> UB	0.607	0.078	7.827	0.000
H4	SE -> BI	0.179	0.067	2.672	0.008
H5	TR -> PU	0.242	0.104	2.327	0.020
H6	TR -> PE	0.409	0.088	4.650	0.000
H7	TR -> SE	0.266	0.124	2.149	0.032
H8	TR -> BI	0.130	0.061	2.108	0.036

5. DISCUSSION AND CONCLUSION

The current study has extended the TAM model with the inclusion training (TR) and self-efficacy (SE) in order to examine the factors affecting the ICT acceptance and use of microfinance employees in Yemen. The findings provides an empirical evidence on the significant roles of TR and SE on the decision to accept and use ICT in microfinance sector. The study model highlights the underlying links between the combinations of TR and SE along with the main core constructs of TAM, explaining the stimulators of ICT acceptance and use. More importantly, It illuminates that TR is a pioneer factor as it affects significantly PU, PE, SE and BI of microfinance employees to accept and use ICT. In general, The results have confirmed the eight hypotheses and empirically validated them in a maturing sector such as microfinance. Specifically, both PU and PE, as two essential constructs of TAM, have significant associations with BI of microfinance employees. This result is consistent with prior studies (Davis, 1989, Davis et al., 1989, Davis, 1992; Venkatesh and Davis, 2000; Mun & Hwang, 2003; Nath et al., 2013; To et al., 2018). This explains that the

awareness of the benefits and the recognition of easiness of ICT among employees are fundamental drivers of ICT acceptance and use. Therefore, managers of MFIs should increase the awareness levels of ICT advantages among their employees and redouble their efforts to make ICT applications easier to be employed. It is also found that SE significantly influences BI of microfinance employees to use ICT. This conclusion is on line with previous studies of Tarhini et al. (2017) and Oye et al. (2012). Here, it is argued that the higher feelings of self confidence and ability of using ICT, the more intention of microfinance employees to use such innovations. Therefore, microfinance management should provide them manuals and encourage them to use ICT in order to increase their SE.

The results have also found that TR plays a significant role in the successful process of ICT among microfinance employees. It has been found that TR is a significant determinant of PU which is similar to the conclusions of previous studies (Agarwal & Prasad, 1999; Giovanni, Mariani et al., 2013; Bazhair & Sandhu, 2015, Lundu & Shale, 2015; Rajan & Baral, 2015). In addition, TR has a significant relationship with PE, supporting the studies of Igbaria et al., 1996; Amoako-Gyampah & Salam, 2004; Giovanni, et al., 2013; Lundu & Shale, 2015; Rajan & Baral, 2015). More importantly, this study has revealed that TR is significantly related to SE, following the results of Compeau & Higgins (1995), Igbaria et al., (1997) and Jeon & Park (2015). Moreover, this study has found that TR has a significant link with BI of microfinance employees to accept and use ICT. The conclusion is similar to the one found by Ibrahim & Zakaria (2016). In summary, the findings show that TR affects the ICT acceptance and use of microfinance employees through PU, PE, SE and BI. This indicates that microfinance management should focus more on providing well designed training programs for the employees to accept and use ICT at the work place. For example, they should include the advantages of ICT in achieving the job tasks and provide specialized programs in the usage of ICT to make it easier. Added to that, attending the training sessions by employees would increase their self-confidence and intention to use such technologies.

The current study is of great importance for both the researchers of IT and microfinance stakeholders due its theoretical and practical contributions. Examining the extended TAM by inclusion self-efficacy and training, particularly giving more focus on training as a key factor that affects acceptance and use of ICT through PU, PE, SE and BI in a maturing and rarely studied sector such as microfinance is a pivotal contribution. This is one of the first studies carried out in the area of ICT which can provide a base for further research works in this industry. Practically, the findings of the study will assist the stakeholders of microfinance in Yemen and other least-

developed countries that share the same characteristics to achieve the dual objectives of MFIs, sustainability and outreach. On other words, they can help them to design proper strategies and make adequate interventions to increase the ICT utilization in microfinance operation activities among employees.

Despite the contribution of the study to the existing body of knowledge, it is not without limitations which provide opportunities for future studies in the IT area. Firstly, This study has developed a model which includes self-efficacy and training, with much focus on training, to the TAM model to explain ICT acceptance and use by microfinance employees in Yemen however, it could not be claimed that it can explain all the determinants of ICT acceptance and use. Therefore, other factors such as personal, managerial and technological characteristics can be included to the main constructs of TAM. It can be also extended to include the outcomes of technology use such as employee performance or productivity. Since the governments pay more attention to microfinance industry as an effective strategy for economic development, government support can be included to the model as a moderator. The same model can be utilized in a different context to find the similarities and differences.

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