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## Adoption of digital finance service in Indonesia: An empirical examination of an extended technological acceptance model

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**ABSTRACT:** The digital financing service have great potential for online loans in Indonesia. This research, therefore, aims to examine the behavioral intentions associated with choosing financing technology (fin-tech) based on the extended TAM Model, which consists of personal character and emotional intelligence. Data obtained from 278 users and non-users showed that ease of usage, usefulness, personal character, and emotional intelligence propensity significantly influenced the behavioral intention of choosing digital financing. This study is relevant to create strategies capable of increasing the adoption of digital financing, improving financial access, and contribute to further advancement in technology.

### 1 INTRODUCTION

According to data obtained by the Indonesian Financial Services Authority in 2018, businesses were unable to optimize investment opportunities, which led to a 14 percent loss on Gross Domestic Product (GDP) at approximately Rp 1,000 trillion (Nobility et al., 2014). Indonesians possess great potential for digital financing because over 40% do not have access to banks. Due to this empirical fact, it became imperative to research behavioral intentions of the adoption, use, and acceptance of digital finance. In 1989, a researcher of management information systems, named Davis, developed a conceptual framework of behavioral utilization known as Technology Acceptance Model (TAM). This device was used to predict, adapt, use, and accept information based on the perception of its usefulness and ease of use to technology. However, this does not fully explain its use in fin-tech. Therefore, additional factors capable of predicting and accepting information are required.

### 2 MODEL AND HYPOTHESIS DEVELOPMENT

The conceptual framework developed by Davis (1989), was used to test the structural equation models to determine variables associated with its ease of usage and usefulness. Furthermore, personal character and emotional intelligence were added to extend and test the demographic factors of TAM based on the studies conducted by Devaraj (2008) and Venkatesh (2016).

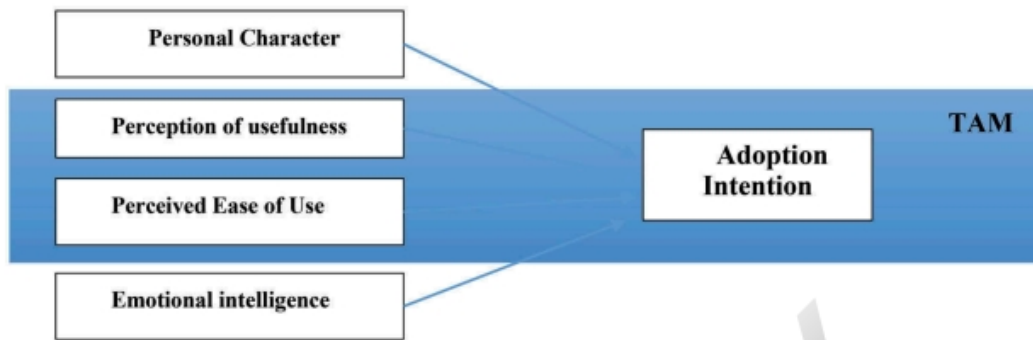


Figure 2.1. Theoretical framework.

The construct of *TAM* has been widely used in research on technology adoption. It consists of the perception of the user *variable*, which is defined as the degree to which a person believes that using a particular system improves performance (Davis, 1989). Research conducted by Lai (2005), showed that perceptions of usability have a positive effect on behavioral intentions to use information technology. According to Yee-Loong Chong (2010), perceived usefulness positively influenced consumer behavior in using information technology. Chuang (2016) stated that the perception of usefulness has a significant positive effect on attitudes toward behavioral intentions in adopting *Financial Technology (Fintech) services*. Based on the descriptions and results of previous studies, the hypothesis is as follows:

**H1: Perception of usefulness has a positive effect on the intention to utilize digital financing**

Davis (1989) defined the perceived ease of using technology as a level where users feel more comfortable and willing to use the system. According to research conducted by Lai (2005), the perceptions of ease of use have a positive influence on behavioral intentions in using information technology. Chuang (2016), also stated that the perceived ease of use has a significant positive effect on attitudes toward behavioral intentions in adopting *Financial Technology (Fintech) services*. Therefore, the formulated hypothesis is as follows:

**H2: Perceived Ease of Use has a positive effect on the intention to utilize digital financing**

Furthermore, limited research on personal characteristics factors has been investigated in technology adoption research. Devaraj (2008) found that personal character influences the intention to use the software in education, with personality factors capable of predicting the use and intention to buy products *online in accordance with e-commerce*. Similarly, personality factors have been used to predict the intention of citizens to use e-government kiosks in rural areas in India (Venkatesh, 2016). Rush *et al.* (2016) also proved that personal character influences students' behavioral intentions in adopting to classroom teaching technology. Therefore, the following hypothesis was formulated:

**H3: Personal character influences the intention to utilize digital financing**

Demaree (2008) reported that emotional reactions influence self-control behavior. Also, Olson (2006) suggested that valuations highly related to the classical financial paradigm have the ability to impact on financial behavior. Besides, Satterfield (1998) also stated that cognitive and affective states of individuals are associated with deviant behavior. While Ameriks (2009) stated that higher financial performance is associated with intellectual intelligence. Therefore, individuals with emotional intelligence tend to cope with the adverse effects arising from risky decisions. These optimistic and confident individuals are more likely to invest in risky alternatives because their emotions have the ability to shape their risk perceptions of alternative risky financial activities (Foo, 2011). In contrast, Rush *et al.* (2016) also proved that students with higher emotional intelligence are able to adapt to technology compared to those with lower levels. Therefore, the formulated hypothesis is as follows.



**H4: Emotional intelligence influences the intention to utilize technology-based financing services (Fintech).**

**3 DATA AND METHODOLOGY**

A survey instrument was administered to a convenience sample of real consumers in Indonesia. The respondents comprised of an equal number of users and non-users, as well as respondents representing diverse key demographic variables with a total of 278 completed surveys. The study used existing multi-item scales to measure the perceived ease of use, usefulness, personal characteristic, emotional intelligence, and intention to adopt. Furthermore, the intention to adopt usage was analyzed as an individual's extent of Internet usage, based on a Likert-type scale response. Users' age, education, and income were measured based on categorical survey responses.

A confirmatory factor analysis (CFA) was conducted, and measurement items were deleted on both substantive and statistical grounds, leaving a total of 31 items. The results of the validity and reliability test of the measurement model showed that the Standardized Loading Factor was between 0.50 - 0.91, Construct Reliability was above 0.7 (0.82-0.92) in the quite high category, while Variance Extracted was above 0.5 and between 0.53 - 0.86. This means that all variables and dimensions are good enough to form a valid and reliable latent variable construct of the Technology-Based Adoption Intention structural model.

**4 RESULT AND ANALYSIS**

The respondents' profiles showed that 54.7% are women, with 95% between 19-38 years. The age distribution generally reflects respondents in the x generation. In terms of education, 66.5% had bachelor's degrees, 14% Masters's degree, and 66.5% were single. Furthermore, 80.2% of the respondents knew financial technology, and 49.3%, installed the applications in their gadgets by 49.3%. However, only 29.1% had really enjoyed the service.

The result provides a good explanation of users' attitudes toward digital finance usage. Also, based on parameter estimates and associated t-values, all hypotheses were supported. Therefore, this study concluded that both perceived ease of use, usefulness, personal characteristic, and emotional intelligence are related to attitude toward digital financing usage.

Table 4.1. Hypothesis testing.

Hypothesis	Path Analysis	Model Structure		Hypothesis Decision	
		Direct Effect	Direct Effect	t-value	
H1	PU→ AI	0,42	0,41	5,33	Supported
H2	PEU → AI	0,22	0,18	2,27	Supported
H3	PC→AI	0,17	0,22	3,26	Supported
H4	EI→AI	0,06	0,12	1,99	Supported

**5 DISCUSSION**

TAM is a useful theory for explaining information technology. Its benefits are useful and support individual activities, with a positive attitude towards Technology-Based Financing Services (Fintech). This study, therefore, supports the effect of perceived usefulness on individual attitudes towards Technology-Based Financing Services (Fintech). Furthermore, the results are also in line with the views of TAM, which stated that users' attitude towards technology is driven by the benefits provided to support their activities (Davis et al., 1989).

Users believe that the Fintech Service is very beneficial and easy to utilize without guidance. Based on the study, it is concluded that the perceived benefits and ease of use of Fintech Services are cognitive factors accepted by consumers.

Personality also plays an essential role in information-seeking behavior based on cognitive or emotion and users' ability to obtain, accumulate, analyze, and assimilate information and consequently improve their decision-making behavior. Therefore, personal character influences the intention to use financial technology. Furthermore, emotional intelligence encourages individuals to carry out risky financial activities easily by generating optimism and confidence. This research showed that the better the individual's personality, the more their intention to use Technology-based financing services (Fintech).

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