Advances in Economics, Business and Management Research, volume 86

2nd International Conference on Banking, Accounting, Management and Economics (ICOBAME 2018)

The Analysis of Technology Acceptance Model (TAM) For Personal Financial Management On Mobile Application Technology

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***Abstract*—This study seeks to analyze the acceptability of technology for personal financial management applications using mobile application technology. This study explored the aspects of perceived usefulness, perceived ease of use, and intention to use of an android-based personal financial management application. The application, which is called Manage Your Money (MYM), is developed by researchers. This research involved 77 respondents to use this application for one week to record their personal financial management behavior. The data were analyzed by Confirmatory Factor Analysis (CFA) to measure the end users' satisfaction with Manage Your Money application. The results show the value of anti-image matrices on each variable has a range of values of 0.731 to 0.805 (greater than 0.5) so that all variables can be analyzed. The rotated component shows that the five variables belong to one group which then forms the end user satisfaction's construct. The results of the study show that 3 aspects in the TAM model go through four variables namely accuracy, system content, ease of use, system format, and timeliness in its use. This research shows that Manage Your Money application is acceptable to users.**

Keywords—technology acceptance model; personal financial management; financial literacy

I. INTRODUCTION

Personal financial management is an important skill that must be possessed. Good personal financial management allows people to achieve their goals in life. Despite its importance, not everyone has sufficient ability nor skills to manage their personal finance. This can cause even the most economically smart individual to be confused or short-minded. Personal financial management is a process of gaining knowledge and understanding of the financial conditions to make assets in daily life and in planning for the future. The importance of education for personal financial management is explained by Muske and Winter [1], they state that personal financial management that is well practiced is believed to be able to ensure long-term financial security. However, the study also found that only few people actually applied the recommended personal financial management practices.

Research studies offer evidence that the recommended practices can offer greater wealth accumulation over the long term [2] but typically find only a minimal usage [3]. That brings up a question of why so few people use them [4]. The ability to manage personal finance is crucial for younger generation as part of the keys for successfully managing their future life. Teenagers must have this awareness early on to ensure that they have good financial literacy for preparing the future.

The level of financial literacy tends to be low in the younger generation [5]. Adolescents are vulnerable to premature affluence behavior in the form of lavish behavior when financial support is available. They are important parts of society that must be empowered in financial management to play their role as economic citizen and to support the country's economy. Personal finance then becomes daily activity that involves all the individual financial decisions such as budgeting, saving, insurance, mortgages. When a person plans his personal finance, he needs to take a range of financial products and other personal factors into consideration. Personal finance has a huge influence on one's life and future.

The younger generation is considered as a group that has good ability in adapting to technology. The use of technology in managing personal finance is expected to able to encourage the younger to practice good financial management in their daily activities. The information technology-based tools that are easily accessed by mobile-based applications should make personal financial management easier in everyday life.

This research seeks to explore the acceptability of technology in the management of personal finance. This study developed an android-based personal finance management application on cellular telephone. Using experiments method, this study found that personal financial management technology was well received by the younger generation to enhance their capability in personal financial management skill.

II. LITERATURE REVIEW

A. Personal Financial Management

Personal financial management helps an individual to create a comfortable life with guaranteed future and freedom to

spend money for achieving life goals. The importance of personal financial management is reflected in all areas of personal and business life. Everyone must learn financial management and apply it to improve financial wellbeing. It is important to improve living standards, which leads to good health and significantly reduce financial stress. In addition, it also allows individuals to make better financial decisions that reduce poverty, reduce debt as well as increase savings and investment [6].

Each individual should understand the importance and benefits of personal financial management. It helps people to pursue financial success, which is the achievement of five lifetime financial goals: pursuing maximum income and wealth, practicing efficient consumption, finding life satisfaction, achieving financial security, and accumulating wealth for pensions and inheritance [3].

The practice of good personal financial management has been shown to provide the family with greater accumulation of wealth [7] and has been linked, although weakly, to greater subjective satisfaction [8]. Researchers have noted, however, that when people try to follow the recommended practices, they often fail to do it completely. Other practices are often neglected; they include preparing net worth statements [9] or having formal goals [10].

Adolescents consider pocket money an income that can be used entirely for the consumption of tertiary needs such as products and self-care services, video games, shopping in malls, watching in theaters, eating in cafes, trending clothing and so on [11,12]. It is important for adolescents to read reference books or participate in seminars to increase their insight and to attend workshops for life skills. However, current teenage consumption behavior tends to be based on what is desired rather than what is needed. Based on the survey results on adolescents of middle and upper class economic, 49% of pocket money is used for snacks, 9.23% credit, 12.13% for school needs, 11.48% for shopping, 3.96% for care and 13.64% for care. Based on these data, the allocation of funds for school needs such as buying books and participating in scientific activities (amounting to 12.13%) is much lower than for shopping, care, credit, movies, clubbing, karaoke and other tertiary needs (amounting to 38.31 %). On the other hand, in the group of adolescents with weak economic, consumption is mostly used for basic needs.

B. Financial Literacy

Financial literacy is defined as knowledge and understanding of financial concepts and risks, ability, motivation and trust in applying knowledge and understanding to make effective financial decisions. It plays important role in improving the wellbeing of individuals and society [13]. Financial literacy education aims to build a generation of economic citizens who have the financial competence to break the chain of poverty, obtain sustainable livelihoods, have economic sustainability and improve financial well-being. They will play an important role in the smooth functioning of financial markets and the economic stability of the nation. The inability of the community to make good financial decisions can have a negative impact on all aspects of the economy of a country [14] such as the occurrence of economic crisis.

Financial literacy education is needed so that teens can manage their money efficiently, avoid premature affluence behavior, prevent them from committing fraud and build a generation of economic citizens. Some financial experts recommend providing financial education in early age. Unfortunately, the education curriculum in Indonesia has not included financial literacy education whereas several countries such as India, Russia and the Netherlands have included financial literacy education in their education curriculum. Financial literacy remains an interesting issue in both developed and developing economies, and has elicited much interest in the recent past with the rapid change in the finance landscape.

Financial literacy is a relative and not an absolute concept. It is possible to define only the basic level of financial literacy required by individuals in a given society. Study by [15] defined financial literacy as the ability to make informed judgments and to take effective decisions regarding the use and management of money. Roy Morgan Research in 2003 agreed that financial literacy was about people being informed and become confident decision makers in all aspects of their life. Financial literacy can be defined as the ways in which people manage their money in terms of insuring, investing, saving and budgeting [15]. According to Lusardi and Mitchell financial literacy can be conceptualized as understanding personal finance knowledge and using it [16]. Hence, it could be described as measuring how well an individual can understand and use personal finance-related information.

Report by Chen and Volpe defines financial literacy as the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being and defines financial education as the process by which people improve their understanding of financial products, services and concepts, so that they are empowered to make informed choices, avoid pitfalls, know where to go for help and take other actions to improve their present and long-term financial well-being [17]. Report by Chen and Volpe defines financial literacy as the ability to evaluate the new and complex financial instruments and make informed judgments in both choices of instruments and extent of use that would be in their own best long-run interests [18]. Study by Chen and Volpe defines financial literacy as knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification [18]. A financially literate population is able to make informed decisions and take appropriate actions on matters affecting their financial wealth and well-being.

C. Technology Acceptance Model

Analytical models have been proposed to facilitate the understanding of the acceptance of information systems and technologies. Among these models, the Technology Acceptance Model (TAM) is one of the most influential, dynamic and robust theories in explaining IT/IS adoption behavior of the consumers [19]. According to Davis, the behavior of using IT begins with the perception of usefulness

and the perception of the ease of using IT (ease of use). Both of these components when associated with TRA (Theory of Reasoned Action) are part of belief. Davis defines the perception of perceived usefulness based on the definition of useful words, namely capable of being used advantageously, or can be used for profitable purposes [20]. Perception of usability is a benefit that individuals believe can be obtained when using IT.

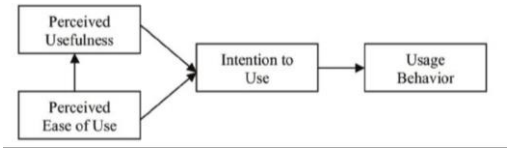

Fig. 1. The original technology acceptance model by Davis [20].

Two cognitive beliefs are postulated in TAM – perceived usefulness (PU), and perceived ease of use (PEOU). TAM also postulates that one's actual use of a particular IS/IT system is influenced directly or indirectly by some specific latent variables, such as the user's behavioral intentions (BIU), attitude (ATU), perceived usefulness (PU), and perceived ease (PEOU) of the system. TAM also postulates that external factors affect behavioral intention (BIU), and actual use (AU) through mediated effects on perceived usefulness (PU) and perceived ease of use (PEOU) [20]. In addition, Consumer Acceptance of Technology (CAT) model is derived from TAM and PAD, which was also proven as a comprehensive and more powerful tool in describing, and predicting consumer adoption of a particular IT/IS [21]. The nature of this study is highly associated with technology adoption of particular services on a mobile device, hence TAM is chosen as the most appropriate research model for this study as it is widely applied by many scholars in describing attitudes and behavioral intention to use IT/IS.

Perceived usefulness is defined as the extent to which a person believes that technology will enhance his/her productivity or performance [22]. It works as a motivational factor in order to grow attitude towards a particular system. From the consumer context, it is the perceived likelihood that the specific technology will definitely benefit a person. A significant body of TAM researches has shown that perceived usefulness is a strong determinant of user acceptance, adoption, and usage behavior.

In TAM, perceived ease of use is defined as the extent to which a person believes that using a technology is simple and easy [23]. This variable has been examined extensively by many scholars in understanding user acceptance of technology [24]. TAM postulates that constructs, such as PU and PEU, have strong influence on an individual's attitude towards using (ATU) and behavioral intention to use specific technologies (BIU). In the context of TAM, attitude toward using (ATU) refers to the evaluative judgment of adopting the technology. Attitude toward adoption has been found to play a key role in technology acceptance within the consumer context [25].

III. METHOD

This study uses two main stages in conducting the experiment to gain the research data as follow:

A. Developed Personal Financial Management based on Android on Mobile Application – Called Manage Your Money (MYM).

This MYM application functions as managers of personal finance. Features in this application are recording income, recording expenses, budgeting, and financial statements.

B. An Experiment in the Form of an Application Trial

The subjects of experiment were the students of Accounting study program at Yogyakarta State University. The experiment involved 77 students who were asked to install the application on their respective cell phones. Briefing related to the features of this application was given at the beginning of the experiment along with its application manual. Besides that, the researcher provided a discussion group that functions as a helpdesk if there were difficulties in using the application during the experiment.

The students were asked to use the application for managing and recording their daily financial activities for one week. At the end of the experimental period, they must fill a questionnaire about the end user satisfaction on mobile application. The questionnaire included questions about accuracy, system content, ease of use, system format, and timeliness in the application use. To ensure the use of application, the cell phones of each experimental subject were also checked.

IV. RESULTS AND DISCUSSION

The data were gathered from questionnaire distribution to 77 respondents who had used the personal financial management application called Manage Your Money (MYM) for one week. The following table presented the respondents' demographics.

TABLE I. DEMOGRAPHIC DATA

Description	Category	Frequency	Percentage
Gender	Male	24	31,17%
	Female	53	68,83%
Using Personal Financial Management Application	Yes	27	35,06%
	No	50	64,94%
Income in a month	Rp 0 - Rp 500.000	20	25,97%
	Rp 500.001 - Rp 1.000.000	42	54,55%
	Rp 1.000.001 - Rp 1.500.000	12	15,58%
	Rp 1.500.001 - Rp 2.000.000	1	1,30%
	> Rp 2.000.000	2	2,60%
Spending in a month	Rp 0 - Rp 500.000	29	37,66%
	Rp 500.001 - Rp 1.000.000	41	53,25%
	Rp 1.000.001 - Rp 1.500.000	6	7,79%
	Rp 1.500.001 - Rp 2.000.000	1	1,30%
	> Rp 2.000.000	0	0,00%

Table 1 above showed that female respondents dominated the experiment (68,83%). Unfortunately, among 77 respondents only 27% (35,06%) had used the application for managing their personal financial activities. Most respondents (53,25%-54,55%) had the range of income and the range of spending at Rp500.001-Rp1.000.000 per month.

Before the research instrument is used for the actual measurement of variables, it is necessary to test the instrument first. The instrument test in this study used bivariate Pearson correlation and Cronbach alpha reliability test. Based on the test results, several questionnaire items were declared invalid, so that they were not used in further testing. Instrument reliability test stated that each factor in this study was reliable with a range of alpha values of 0.641 to 0.861. To produce a good research model, a confirmation using factor analysis test was conducted. It was found that some items cannot be used because they produced anti-image matrices values of less than 0.5.

TABLE II. THE RESULT OF INSTRUMENT TESTING

Variabel	Anti-Image Matrices	
Accuracy	**A1**	0,829
	A2	0,895
	A3	0,864
	A18	0,857
	A21	0,827
	A26	0,873
	A31	0,845
	A35	0,839
	A24	0,887
Content	**C4**	0,708
	C5	0,675
	C14	0,603
	C22	0,818
	C28	0,699
	C30	0,623
	C34	0,641
	C44	0,779
Ease of Use	**E8**	0,867
	E9	0,865
	E15	0,875
	E32	0,873
	E33	0,815
	E39	0,889
Format	**F10**	0,649
	F11	0,713
	F19	0,685
	F20	0,747
	F37	0,798
Timeliness	**T13**	0,538
	T23	0,510
	T29	0,687

After obtaining the results of instrument testing, the researchers used the Confirmatory Factor Analysis (CFA) method to measure end user satisfaction with the use of Your Manage Money (MYM) application. The results of data processing show the value of anti-image matrices on each variable has a range of values of 0.731 to 0.805 (greater than 0.5) so that all variables can be analyzed further. The rotated component shows that all variables become one group simultaneously, so the five variables form one form of end user satisfaction construct. The following construct images are formed based on the results of the study:

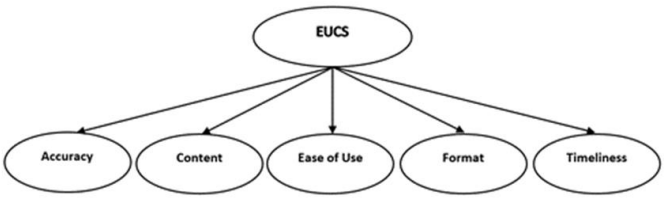

Fig. 2. The end users computing satisfaction.

Figure 2 shows the model of End Users Computing Satisfaction (EUCS) which is formed by five factors, namely accuracy, system content, ease of use, system format, and timeliness. Based on the results, it can be stated that the application of Manage Your Money is acceptable to the users.

V. CONCLUSION

The study used Confirmatory Factor Analysis (CFA) to measure the end user satisfaction on a mobile application of personal financial management, namely Manage Your Money. The results show the value of anti-image matrices on each variable has a range of values of 0.731 to 0.805 (greater than 0.5) so that all variables can be analyzed further. The rotated component shows that all variables become one group simultaneously, so the five variables form one form of end user satisfaction construct. The results of the study show that 3 aspects in the TAM model go through five variables or factors. The forming factors are accuracy, system content, ease of use, system format, and timeliness in its use. This research shows that your Money Manage application is acceptable to users.

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