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Differences of Gender Perception in Adopting Cashless Transaction Using Technology Acceptance Model (TAM)

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Abstract: The purpose of this study is to develop a technology acceptance model (TAM) to find out the differences of gender perception in adopting cashless transactions. In this research, the author provides the measurement of differences gender perceptions in adopting cashless by looking at perceived usefulness, perceived ease of use, as well as perceived security to measure the acceptance of technology in students in using cashless transactions. The data collection technique used was a survey of 260 respondents who were undergraduate students, and then the data is processed through structural Equation Modelling (SEM) with Amos software. The results of this study indicate that (1) For male, perceived ease of use was not able to increase the using cashless transaction; for female, perceived ease of use significantly and positively affect the using of cashless transaction. (2) & (3) for the perceived usefulness and perceived security, male student has a positive effect and significant in using cashless transaction; different from the female student that has a positive effect but not significant toward the using cashless transaction.

Keywords: Technology Acceptance Model, Cashless Transactions, Gender, Student

INTRODUCTION

Various kinds of developments in information technology, one of which is in the field of economics. An example of economic development that has occurred is the development of information technology that facilitates innovation in the payment system, namely the emergence of non-cash transactions. This transaction does not use physical money anymore when trading goods or services. (Chaveesuk et al., 2019). This new technology allows mobile users today to use their smartphones to make money transactions or payments using applications installed on the phone (Saraswat & Mehta, 2017). The transformation of electronic payment transactions consists of several models, including electronic payment cards, digital wallets, or using electronic money that adorns means of payment through devices either in restaurants, supermarkets, or other payment places (O., 2018). In practice the use of cashless transactions are faster, relative easier, and safer because there is no need to carry a lot of cash, and this cashless method can be said to be more transparent because transactions that occur while using cashless will be automatically recorded by the system so that they can be easily tracked (Ramya et al., 2017). The successful acceptance of technology by the community in terms of the use of non-cash transactions can be measured by the development of TAM (Technology Acceptance Model) that is an information system theory that contains the decision-making process whether a technology can be accepted or not accepted by users, and also as a consideration for applying new technology (Folkinshteyn & Lennon, 2016).

This study is different from previous research, in research (Farida et al., 2016) using planned behavior theory to measure gender differences in payment transactions using electronic money. Meanwhile in research (Farida et al., 2016; Maqbool Ahmad, 2018; Wulandari & Sumadi, 2020) only

measures how acceptance of a technology without differentiating from a gender perspective. In this research, the author intends to combine the two research topics by using TAM in measuring differences in gender perceptions in adopting cashless by looking at perceived usefulness, perceived ease of use, as well as perceived security to measure the acceptance of technology in undergraduate students in using cashless transactions. The purpose of this research is to develop a Technology Acceptance Model (TAM) to find out the differences of gender perception in adopting cashless transactions.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

In this study, a technology acceptance model (TAM) is used, which is that this model states that users tend to use a system when the system is easy to use and useful for them (He et al., 2018). TAM is the result of the development of Theory of Reasoning Action (TRA) which functions to evaluate the acceptance of user technology, which is measured based on intention and its effect on attitudes, perceived usefulness, perceived ease of use on intention to use (Ofori & Appiah-Nimo, 2019). TAM explains that information systems can improve organizational performance, and make it easier for users to complete one's work. (Tarhini et al., 2017). Many companies are adopting and using information technology, so that many researchers want to research on any topics that can predict the perception of information technology. Tam is one model that can be used to investigate this. TAM focuses on the characteristics of the use of information technology by users as seen from the level of convenience and benefits of technology (Maqbool Ahmad, 2018).

Perceived ease of use (PEOU) and cashless transactions

PEOU is a way to know the extent to which someone believes that using a technology will be very easy and not feel overwhelmed. (Davis, 1986). Ease of use perception is part of the TAM factor which is an unobserved variable that requires a manifest variable in its measurement. The result of research (Filona & Misdiyono, 2019) shows that there is no significant effect of perceived ease of use on the use of e-money. And in the research of (Jin et al., 2020) indicates that there is a positive and significant effect of perceived ease of use on the intention to use a mobile wallet. Based on differences in previous research results, the following hypothesis is proposed:

H1: Perceived ease of use would be able to increase the using of cashless transactions.

Perceived useful (PU) and cashless transactions

PU is defined as a subjective probability that technology can increase consumers to achieve their goals. in the result of (Liébana-Cabanillas et al., 2017), shows that its perceived usefulness can increase consumer use of the non-cash payment system. The benefits that are felt when using a payment system can increase one's intention to use a system. The result of research (Filona & Misdiyono, 2019) indicates that there is no significant effect of perceived usefulness on intention to use e-money. While in research of (Jin et al., 2020) shows that there is a positive and significant influence in accepting a mobile wallet. Based on the results of previous thoughts, this research presents the hypothesis as follows:

H2: Perceived useful would be able to increase the using of cashless transactions.

Perceived security and cashless transactions

In information technology, perceived security is often used by researchers to measure the level of security that is felt when adopting a technology. According to (Zhang & Luximon, 2020), initially perceived security was defined as a measure of a person's sense of security in accessing or providing sensitive information on a web. Over the years, the businesses always collected customer information as data for the company, so a business is familiar with the data privacy of their customers. even though technological sophistication has increased, there are still occurred the privacy issues. (Damghanian et al., 2016).²⁷ In this study, the model developed is the Technology Acceptance Model or commonly abbreviated as TAM, and adds the perceived security that has also been raised in the (Liébana-Cabanillas et al., 2017) research. The results in this study are that perceived security affects the intention to use mobile payments positively, so the higher the level of security provided for the use of mobile payments, the higher one's intention to use this type of payment. Based on previous research, this research purpose the following hypothesis:

H3: Perceived security would be able to increase the using of cashless transactions.

Cashless Transaction

Payment systems play an important role in a country's economy. If the payment system does not run properly and is problematic, it will damage the stability of a country's economy (Filona & Misdiyono, 2019). The instrument of the payment system itself is a means of payment that can be divided into two namely cash and cashless. Before the presence of internet technology people initially used cash payment tools that used money physically in the form of banknotes and coins (Jun et al., 2018). Then when there's a rapid technological development people start to use payment tools on a non-cash way by not using money physically, just by carrying a card or mobile phone only the public can already transact. Technological developments also stimulate the transformation of money to create efficient transactions.

Figure 1: Conceptual Framework¹⁰

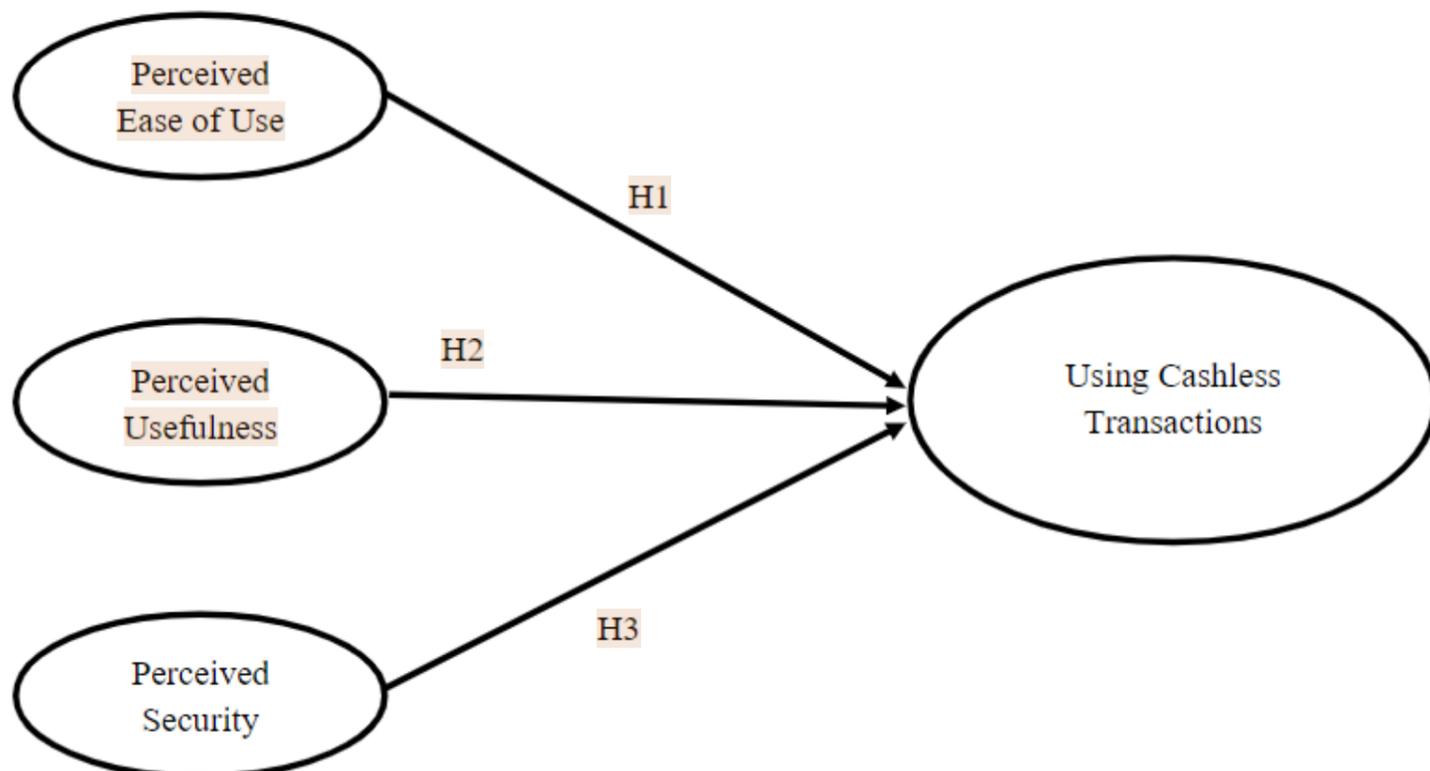


Figure 1 shows the effect of the four variables, namely perceived ease of use (X1), perceived usefulness (X2), and perceived security (X3) as independent variables. Then using cashless transaction as the dependent variable (Y). Which then made into three hypotheses, namely the perceived ease of use positively affects the using of cashless transactions, the second is perceived usefulness positively affect the using of cashless transactions, and the third perceived security positively affect the using of cashless transactions.

METHOD

Sample and Population

The population in this study is students in Denpasar, this place chose because Denpasar is the capital of Bali that so many traders provide cashless transactions compared to other cities. The number of populations in this study is unknown. The number of population in this study is unknown, so that stratified random sampling is considered suitable for use as a sampling techniques. Stratified random sampling is used when the population is divided into levels, for example, the characteristics of educational levels for male and female students (Aydin, 2016). Stratified uses certain criteria for samples to be used to achieve the purpose of research. Sample criteria required are students who are studying undergraduate in Denpasar, aged 18 to 25, and regularly using cashless transactions. The sample used in this study amounted to 260 students, which were divided into two types namely 130 male students and 130 female students.

Data Collection Method and Technique Analysis

This study will be conducted in Denpasar City, especially the university located in Denpasar City. Research data is obtained through surveys. The survey was conducted by distributing questionnaires to respondents. And the type of data used is primary data. Primary data is defined as data obtained directly from the first source on a research object. A questionnaire was distributed for the 260 students in Denpasar that uses the cashless transaction. The process of distributing questionnaires was carried out online. Online distribution of questionnaires uses the "google docs" application, which then links to the questionnaire distributed via social media accounts to respondents according to the sample criteria that have been determined. The questionnaire distributed to respondents used a likert scale data measurement method consisting of ten-point likert scales. This scale is used to find out how many respondents feel agree or disagree with the statements given in the questionnaire. Reliability and validity tests were used to verify the suitability of the measurement scale, namely the confirmatory factor analysis method. Confirmatory factor analysis is a statistical method used to describe the variability between variables which can potentially be grouped into groups called factors. The data analysis technique used is SEM (Structural Equation Modeling), one of the suitable software for SEM analysis is the Amos software.

FINDINGS AND DISCUSSION

Findings

Reliability and Validity

The validity test in this study used the loading factor and average variance (AVE). It can be said that it is valid if the loading factor and AVE are not <0.5 . Then to test the reliability using composite reliability (CR), and for the requirements the value must be > 0.6 . Table 1 presents the results of the loading factor, AVE, and CR of the two sample groups that have met the criteria for both male samples and female samples. So that the measuring instrument in this study is said to be valid and reliable.

Table 1: Result of Reliability and Validity test

	Male			Female		
	Factor loading	Composite reliability	Average variance	Factor loading	Composite reliability	Average variance
PEOU (Perceived Ease of Use)		0,829	0,619		0,822	0,61
PEOU4 I use cashless payments on the basis of my own personal desire	0,804			0,783		
PEOU3 Overall, cashless payments are easy to use	0,832			0,771		
PEOU2 In my opinion, the use of cashless transactions can be used anytime and anywhere (flexible)	0,72			0,783		
PU (Perceived usefulness)		0,775	0,534		0,830	0,62
PU5 I use cashless transactions because of the cashback and discounts offered	0,725			0,777		
PU3 Using cashless payment instruments, increases the effectiveness of the payment process	0,728			0,802		
PU2 By using cashless payment instruments, I feel that the transaction process is faster	0,739			0,783		
PS (Perceived Security)		0,817	0,691		0,753	0,604
PS2 I entrust cashless payment instruments in my transactions	0,857			0,735		
PS1 I feel safe using cashless transactions as a means of payment	0,805			0,818		

UCT (Using Cashless Transactions)		0,776	0,634		0,703	0,543
UTC1 I prefer to use cashless than cash because I don't have to carry cash anymore	0,755			0,769		
UTC2 I only use cashless when I don't have cash	0,836			0,703		

Table 2: Fit Model

Fit Model	Male	Female
NFI	0.951	0.919
RFI	0.924	0.874
IFI	0.991	0.955
TLI	0.985	0.929
CFI	0.990	0.954

This study also calculates the fit model, which is the suitability of the research data and the resulting model. Table 2 shows the fit model for both male and female respondents. In male respondents the results of the fit model obtained are in accordance with the specified value, which is above 0.90. Meanwhile for female respondents, the results obtained are average but still acceptable.

Hypothesis Tests

In this study presented three hypotheses. This hypothesis test is divided into two, namely the first stage testing using a sample of male respondents, and the second stage using a sample of female respondents. Table 3 showed the result of hypothesis testing, and then will be interpreted in discussion section.

Table 3: The hypothesis testing result

Hypotheses	Male Samples			Female Samples		
	β	P	Decision	β	P	Decision
H₁ 5 Perceived Ease of Use → Using Cashless Transaction	-0,08	0,642	Rejected	0,35	0,040	Accepted
H₂ Perceived Useful → Using Cashless Transaction	0,47	0,006	Accepted	0,09	0,801	Rejected
H₃ Perceived security → Using Cashless Transaction	0,64	***	Accepted	0,60	0,130	Rejected

Figure 2: Model of male sample

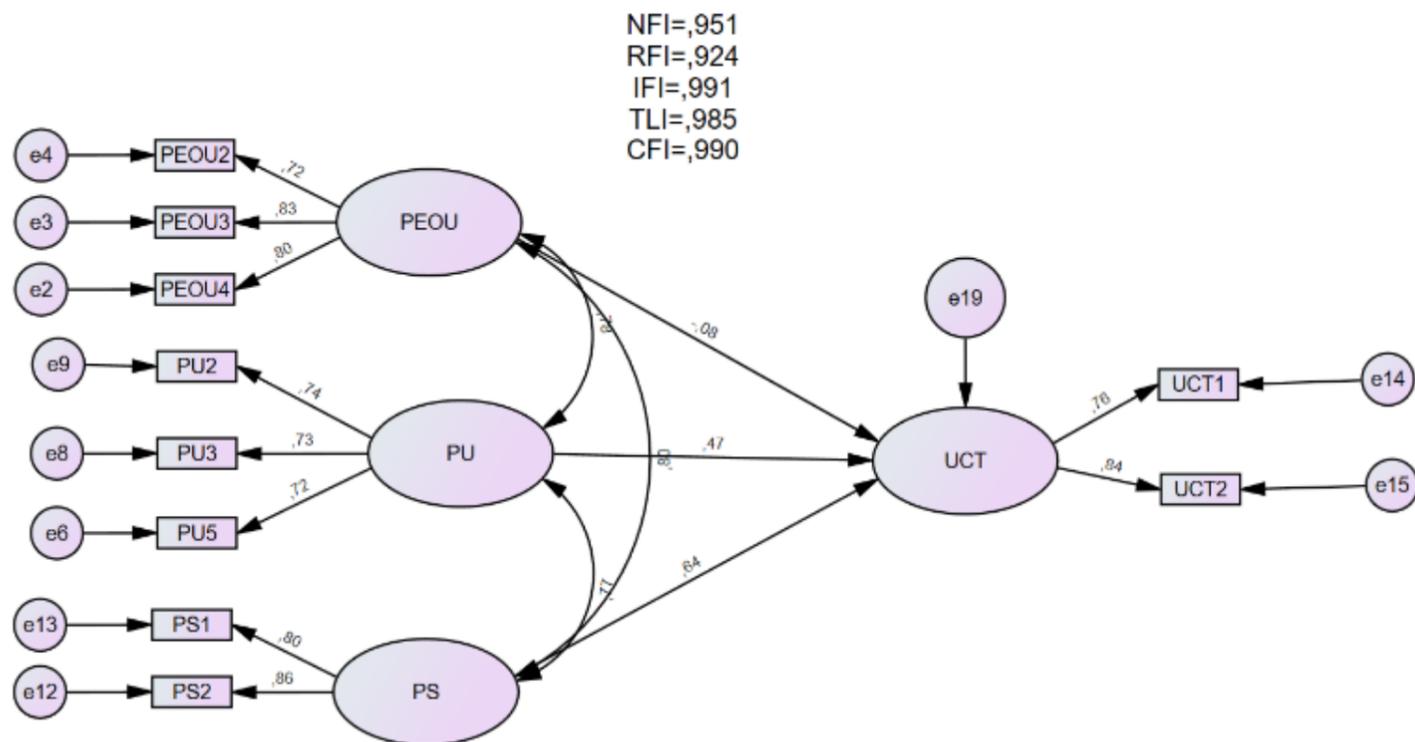
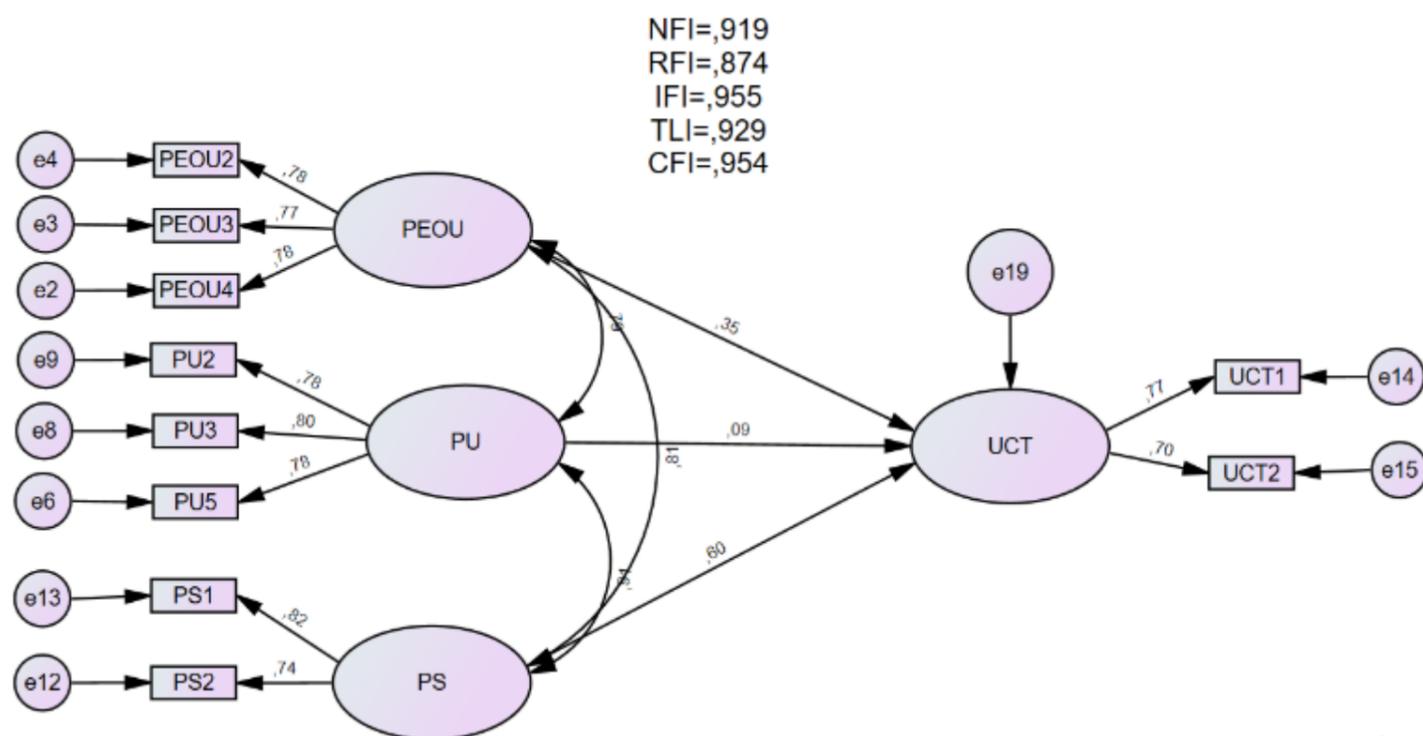


Figure 2 shows the results of the analysis using SEM for male samples. Hypothesis 1 states that the perceived ease of use affects the increasing using of cashless transaction in students, after calculating the data collected, it is obtained that the perceived ease of use wasn't able to effects increasing using of cashless transactions ($\beta = -0.08$; $P = 0.642$). So, hypothesis 1 cannot be accepted. Then in hypothesis 2 states that perceived usefulness can increase the use of cashless transactions among students, the results of data processing show that perceived usefulness can increase the use of cashless transactions among students ($\beta = 0.47$; $P < 0.05$). Hence, hypothesis 2 can be accepted. Last, hypothesis 3 states that perceived security can increase the use of cashless transactions among students, according to the data obtained, the result show that perceived security was able to increase the use of cashless transactions. ($\beta = 0.64$ $P < 0.05$). So, it can be said hypothesis 3 is accepted.

Figure 3: Model of female sample



In figure 3 showed results of the analysis using SEM for female samples. In this study hypothesis 1 states that perceived ease of use affects the increasing using of cashless transaction in students, after calculating the data collected, it is obtained that the perceived ease of use can affects increasing in using cashless transactions ($\beta = 0.35$; $P < 0.05$). Thus, it can be said that hypothesis 1 is accepted. Then in hypothesis 2 states that perceived usefulness can increase the use of cashless transactions among students, and the results of data processing show that perceived usefulness cannot increase the use of cashless transactions among student ($\beta = 0.09$; $P = 0.801$). So, for the hypothesis 2 cannot be accepted. Last, hypothesis 3 states that perceived security can increase the use of cashless transactions among students, according to the data obtained, the result show that perceived security cannot increase the use of cashless transactions ($\beta = 0.60$ $P = 0.130$). So, the third hypothesis cannot be accepted.

Discussions

Cashless transactions are the result of developing information technology. One of the reasons for the development of this technology is that according to (Farida et al., 2016), people prefer something that is more practical in achieving their goals, for example when making transactions people don't need to carry a lot of cash, they only need to bring a smartphone or card. In this study, there were differences in results between male students and female students. The first thing is perceived ease of use. For male students, the perceived ease of use wasn't able to effects increasing using of cashless transactions in student. For female students, the perceived ease of use can affects increasing in using cashless transactions positively and significant. In accordance with the results received, it can be said that female students really feel the convenience when making cashless transactions, the easier the cashless transaction process is, the higher the use of female students. Unlike male students who are seen as not really concerned with the perceived convenience or this could be because male students use cashless less often so they don't delve into the features that exist in the cashless transaction.

Perceived usefulness represents acceptance of technology in terms of the benefits it provides. In the result of this study, there are differences in the results of male students and female students. For male student, perceived usefulness significantly affected the using of cashless transaction in positive way. Then for

female students, perceived usefulness can affect the using of cashless transaction positively but not significant. This is happened because when using cashless transactions, both male and female students really feel the benefits provided by using cashless. Then the higher the benefits obtained, the higher the use of these cashless transactions.

Perceived security represents acceptance of technology in terms level of security obtained when using cashless transactions. In the result of this study, there are differences in the results of male students and female students. For male students, perceived security positively affected the using of cashless transaction and the effect is significant. For female students, perceived security positively affected the using of cashless transaction but the effect is not significant. This is happened because when using cashless transactions, both male and female students think about security in cashless use, so the higher the security level of cashless transactions, can increasing the level of cashless users.

CONCLUSIONS

Cashless transactions can provide various benefits in everyday life which are very efficient and effective in use. There have been many people who have felt the convenience, benefits, and security of this cashless, but everyone is different in interpreting things. One of the theories that can be used is technology acceptance model (TAM), which is the information technology model by developing the ease of use and the usefulness of technology. The difference presented in this study is the difference in gender between the undergraduate students. There are differences in the three hypotheses, there are (1) For male student, perceived ease of use cannot increase the using cashless transaction; for female, perceived ease of use significantly affects the use of cashless transaction positively. (2) For male student, perceived usefulness significantly affected the use of cashless transaction in positive way; for female student, perceived usefulness positively affects the using of cashless transaction but not significant. (3) For male student, perceived security positively affects the using of cashless transaction and the effect is significant. For female student, perceived security positively affects the use of cashless transaction but the effect not significant. This difference proves that a person's attitude in accepting or rejecting a technology is not the same and depends on that person's needs.

LIMITATION AND FUTURE RESEARCH

This study has limitations that open up opportunities for further investigation. This research is a development of the TAM model which can affect the level of interest in using a new system. however, in this study, the theory and conditions in the field are not yet fully compatible. but research on the development of the payment system is very interesting to discuss and there will be many developments for the coming years. For future research, I suggest that if you want to research according to the topic in this study, you must make sure that the respondent really fits the predetermined criteria, namely respondents who use cashless as often as possible, it's better to use the interview system first.

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