Integration of Mobile Perceived Compatibility, Mobile Perceived Financial Resources, and Mobile Perceived System Quality with TAM in Virtual Hotel Operator Applications in Indonesia

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Abstract

The development of current technology makes people want to book hotel rooms that suit their own needs and desires, then the VHO application in Indonesia comes. This causes the need for a model that is able to measure the extent to which the level of acceptance of VHO applications. The existence of a measurement model for the acceptance of the VHO application will greatly help business people in this field to be able to develop their products and improve the performance of the service products they offer. The purpose of this research is to determine how much acceptance of VHO application users based on the Technology Acceptance Model (TAM). This research approach uses a quantitative approach with survey methods. The data collection technique is using a questionnaire that distributed randomly to users of the VHO application. The data analysis method used is descriptive analysis, using multiple linear regression techniques. The results of this study indicate that the variables of mobile perceived compatibility, mobile perceived financial resources, and mobile perceived system quality have a simultaneous effect on the mobile variable perceived usefulness, the mobile variable perceived ease of use and the intention to use variable.

Keywords: TAM, VHO, Compatibility, Financial Resources, System Quality

1. Introduction

Industrial Revolution 4.0 is an industry trend that combines automation technology and cyber technology to create a change, where to produce a large quantity of goods utilizing machines as driving and processing power. The emergence of this technological innovation has a strong impact on hotels,

including how to book rooms. Initially if you wanted to book a hotel room you had to contact a travel agent, now you can do it independently and can do it anywhere and anytime.

A hotel booking application in order to get huge users, the application must pay attention to the ease of use factor. If the user finds it difficult to make hotel room bookings transactions, it is likely that he will not use it sustainably. No matter how competitive the price offered, if the user has trouble processing the transaction, it is useless. When users find technology easy to use and learn, especially if it is supported by a friendly interface, they will adopt these new innovations (Ooi and Tan, 2016). The less the user performs activities related to the application, the more likely he will find the application useful (Dumpit and Fernandez, 2017). Ease of use also refers to the user expecting the application to be free of effort (Chen, 2008).

One way to measure acceptance of technology is the Technology Acceptance Model (TAM). TAM was first introduced by Fred Davis in 1986 which is a model designed to analyze and understand the factors that influence the acceptance of the use of computer technology. TAM aims to explain and estimate user acceptance of an information system. TAM provides a theoretical basis for knowing what factors influence the acceptance of a technology in an organization. In addition, TAM also explains the causal relationship between beliefs (on the benefits of information systems and their ease of use) and the behavior, objectives, and actual use of users of the information system (Apriyanto, 2015). TAM serves to explain and predict user acceptance of a technology and explain the behavior of users of that technology. TAM places the attitude and behavior factors of users with two variables, namely perceived usefulness and perceived ease of use (Hartono, 2004).

There have been many studies conducted using the TAM development model. TAM is used to determine what factors determine consumer acceptance of mobile payment services (Schierz et al., 2010). TAM is also used to analyses the factors that influence the user's desire to use a smartphone in the medical field (Mohamed et al., 2011). Then TAM is used to determine what factors affect the use of a mobile credit card (Leong et al., 2013). In the same year, there was a study using the E-Service Technology Acceptance Model (ETAM) to assess user acceptance of e-service technology (Taherdoost, 2009). TAM is also used to empirically test a research model that combines the antecedents of mobile shopping loyalty in the context of hotel room bookings (Ozturk et al., 2016). Then TAM is used to identify external factors used in the context of e-learning adoption (Abdullah and Ward, 2016). In addition, there is a study that aims to analyses the factors that can influence students' intention to use the mobile banking application (Kurniawati et al., 2017). Furthermore, there is a study that measures the reliability of a mobile application at PDAM Surya Sembada Surabaya (Utomo and Walujo, 2018).

Furthermore, research using TAM has been used to measure user acceptance of Bukalapak e-marketplace using quantitative descriptive methods. In the past year, TAM was used to build a model that can measure technology acceptance in the Shopee and also Lazada e-marketplace application (Prakarsa, 2019; Nurzanah and Sosianika, 2019). TAM is used to empirically explore the acceptance of the Mobile Library Application (MLA) with the aim of conveying empirical provisions regarding the acceptance of MLA (Rafique et al., 2020)

Supporting this, there is now an online hotel room reservation service provider business, namely VHO (Virtual Hotel Operator). VHO is a start-up in the technology sector, especially the hotel operator sector that collaborates with hotels (generally budget hotels, but has penetrated into villas and star hotels), where property owners are offered to register their property for accommodation (Wiastuti and Susilowardhani, 2017). There have been several studies on VHO, one of which focuses on the effect of service quality on VHO customer satisfaction and loyalty (Basri, 2019), then there is a study that aims to analyses the effect of service quality through tangible, reliability, responsiveness, assurance, and empathy variables. consumers who stay at the VHO in the Surabaya area (Gunawan et al., 2019).

Furthermore, regarding VHO, there is research that analyses the effect of digital marketing on brand advocacy with perceived quality and customer engagement as intervening variables in VHO Airy (Prasojo et al., 2020). The trend of VHO in 2020 which is increasingly developing in Yogyakarta is in line with the trend of tourism with a minimal budget (Kusumawati, 2020).

Furthermore, research on system quality with the object of m-BI research has been carried out with the results showing that the quality attributes of the m-BI system affect the use of m-BI indirectly through engagement (Peters et al., 2016). A successful business-to-business data exchange can help companies increase cooperation between companies, thereby increasing the company's competitive advantage. By using the two-factor theory and trust, it is found that there are differences in the impact of information quality, system quality and service quality on users (McKnight et al., 2017).

2. Hypotheses Development

This study uses three main variables that have been adapted from research and three external variables (Tom Dieck and Jung, 2018). The main variables used are mobile perceived usefulness, mobile perceived ease of use, and consumer intention to use. Meanwhile, the three external variables are mobile perceived compatibility, mobile perceived financial resources, and mobile perceived system quality.
People who are accustomed to using mobile payments have a positive attitude towards using these services and have a higher intention to use them. Intention to use is the tendency of a person's behavior to continue using the technology given (Davis, 1989).

Mobile perceived usefulness referring to how much benefit from contactless payment technology, it was found that consumers would be more effective at checkout because it was faster, then consumers did not need to swipe a credit or debit card, just scan the smartphone to the NFC machine. Mobile perceived usefulness is a strong driver of use intent. The results of previous research on mobile perceived usefulness have shown a significant relationship between the mobile variable perceived usefulness and consumer desire for use (consumer intention to use) (Dumpit and Fernandez, 2017).

H1: mobile perceived usefulness has a significant relationship to consumer intention to use

Mobile perceived ease of use leads to how easy the technology is to use, when consumers identify that a technology is easy to use and learn, they will choose to take this new innovation, especially if it is supported by a friendly interface, and how to use it easily. The less users do activities related to social media, the more likely they will find social media sites useful. The results of previous research on mobile perceived ease of use have shown a significant relationship between mobile variables perceived ease of use and consumer desire for use (consumer intention to use) (Dumpit and Fernandez, 2017).

H2: mobile perceived ease of use has a significant relationship to consumer intention to use

Mobile Perceived compatibility leads to the extent to which innovation that considered consistent with existing values, previous experiences, and the needs of potential users. In his research, it is stated that in order to increase the use of mobile technology, the system must create the impression that the technology is easy to use and compatible with the user's lifestyle. Consumers are more accepting if they have previous experience using technology, consumers may think that if the new technology will have difficulty using it (Ooi and Tan, 2016). Based on the research above, the hypothesis was found:

H3: mobile perceived compatibility has a significant relationship with mobile perceived ease of use.

Mobile Perceived compatibility refers to the extent to which mobile phone innovation can be adapted to potential needs, and user behaviour patterns (Ooi and Tan, 2016). In his research, consumers have adopted smartphones to buy products and services, access television, banking, exchange information simply by bringing cell phones closer to each other, and playing online games together. Thus, past experience using smartphone is able to be considered an indicator of compatibility. Perceived compatibility has a positive effect on perceived usefulness (Ismail, 2016). Based on the research above, the hypothesis was found:

H4: mobile perceived compatibility has a significant relationship to mobile perceived usefulness

Mobile perceived financial resources, this refers to financial resources generally impede the adoption of new innovations to consumers. Devices that adapt to these new innovations are usually more expensive, this is due to high production costs that require redesigning of existing ones. Given financial considerations, perhaps these innovations out of reach of consumers due to limited financial resources. Perceived financial resources to measure perceived financial resources and assess the level of financial difficulty felt by technology developers (Hong and Harrington, 2016). Therefore we assume that:

H5: mobile perceived financial resources have a significant relationship with mobile perceived ease of use
H6: mobile perceived financial resources have a significant relationship to mobile perceived usefulness

The quality of information systems on user satisfaction means that the higher the quality of the system will lead to higher user satisfaction and usage, which in turn will positively affect individual productivity, with the result of increased organizational productivity (Aprianty and Tanamal, 2018). System quality is a characteristic of the information attached to the system itself, where the quality of the system refers to how well the hardware, software, and procedural policies of the information system can provide information on user needs (Septianita et al., 2014).

System quality, which is used in the company, is related to the information system that is implemented according to the needs and capabilities of the user so that it can be used to process data into quality and useful information for users of that information (Tulodu and Solichin, 2019). System quality can be measured in terms of access speed, system reliability, ease of use, ease of access and system security. Based on the research above, the following hypothesis is determined:

H7: mobile perceived system quality has a significant relationship to mobile perceived usefulness
H8: mobile perceived financial resources have a significant relationship with mobile perceived ease of use

Perceived usefulness has become a variable that plays a role in many technology acceptance models that have been proposed since 1989. Perceived usefulness is defined as the extent to which a person believes that using a particular system will improve their job (Zarmpou et al., 2012). Perceived usefulness affects consumers' interest in using technology. Perceived ease of use is an important concept in many technology adoption models so that it has a positive impact on reuse behavior intentions. Perceived ease of use affects consumer interest in using technology. Based on previous research, the following hypotheses were determined:

H9: *mobile perceived usefulness, and mobile perceived ease of use have a significant relationship to consumer intention to use.*

Mobile Perceived compatibility, it is defined that in order to increase the use of mobile technology, the system must create the impression that the technology is easy to use and compatible with the user's lifestyle. Mobile perceived financial resources are used to measure perceived financial resources and assess the level of financial difficulties felt by technology developers (Hong, 2016). Mobile perceived system quality can be measured by ease of use (Tulodu and Solichin, 2019). Based on previous research, the following hypotheses were built:

H10: *mobile perceived compatibility, mobile perceived financial resources and mobile perceived system quality have a significant relationship to mobile perceived ease of use*

Mobile Perceived compatibility refers to the extent to which mobile innovations can be matched with potential wholes. Mobile perceived financial resources refer to financial resources that usually hinder the application of new innovations to consumers. Mobile perceived system quality is related to information systems that are implemented according to user needs and abilities (Tulodu and Solichin, 2019). Based on previous research, the following hypotheses were built:

H11: *mobile perceived compatibility, mobile perceived financial resources and mobile perceived system quality have a significant relationship to mobile perceived usefulness.*

Based on the above hypotheses, the research paradigms have been built that presented in Figure 1.
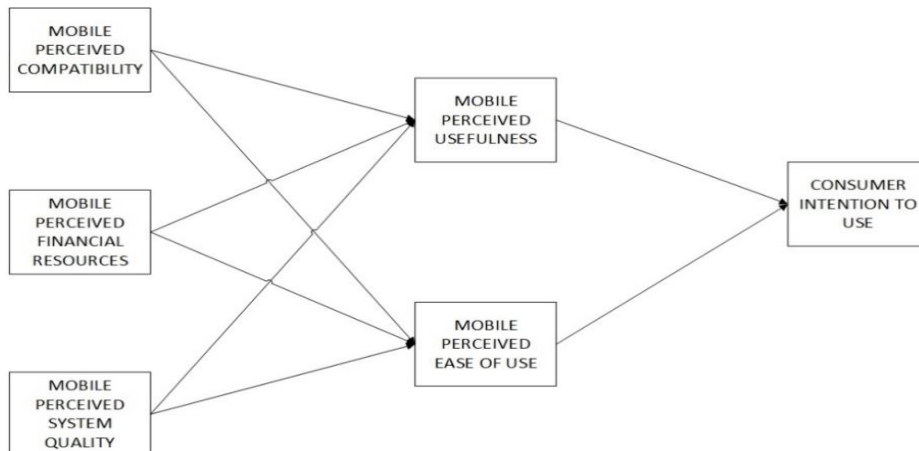

Figure 1: Research Paradigm

The Figure 1 contains 3 external variables; mobile perceived compatibility, mobile perceived financial resources, mobile perceived system quality. The main variables are mobile perceived usefulness, mobile perceived ease of use, and consumer intention to use. Based on Figure 1, the following indicators can be formulated in Table 1.

Table 1. Operational Research Variables

Constructs	Number of items	Sources
Mobile Perceived Compatibility	3	(1), (10), (27)
Mobile Perceived Financial Resources	3	(1), (28), (15)
Mobile Perceived System Quality	4	(29), (30), (31)
Mobile Perceived Usefulness	4	(1), (2), (16)
Mobile Perceived Ease of Use	4	(1), (2), (14)
Consumer Intention to Use	3	(6), (33), (15)

3. Methodology

3.1 Participants and instruments

The object of this research is the users of the VHO application that are widespread in Indonesia. Researchers want to find out how compatible the VHO application has been downloaded, how much risk occurs when transacting in the VHO application, how easy the VHO application is to use, the researcher also wants to find out whether the VHO application helps ease the user's work. Based on previous research data, the authors are interested in conducting research "Integration of Mobile Perceived Compatibility Factors, Mobile Perceived Financial Resources and Mobile Perceived System Quality with TAM on Virtual Hotel Operators Applications in Indonesia". This study aims to develop and expand TAM with external variables compatibility, financial resources and system quality.

The survey method is the method used in this study. The survey method itself is a method that studies data based on a sample to measure the relationship between variables in a population (Cavana et al., 2001). The study took a number of samples from the population through a questionnaire to collect basic data included in the survey research category. A total of 122 respondents with valid questionnaire answers were sampled for this study. If described, this study adopts a framework that has been modified by using 3 main variables and 3 external variables. The main variables used are; mobile perceived usefulness, mobile perceived ease of use, and consumer intention to use. The external variables are; mobile perceived compatibility, mobile perceived financial resources, and mobile perceived system quality.

3.2 Data Analysis

The statistical software SPSS 25 was used to calculate these collected data. For the research questions, validity and reliability test, correlation analysis and multiple regressions were used to answer the research question.

4. Result and Discussion

The data obtained has shown a validity level that is valid and consistent reliability, where the

resulting r value has met the requirements so that it is significant and reliable as shown in Table 2.

Table 2: T test result

Independent Variable	Dependent Variable	T Value	T table	Significant Value
Mobile Perceived Usefulness	Consumer Intention to Use	4.837	0.676	.000
Mobile Perceived Ease of Use	Consumer Intention to Use	4.688	0.676	.000
Mobile Perceived Compatibility	Mobile Perceived Ease of Use	5.347	0.676	.000
Mobile Perceived Compatibility	Mobile Perceived Usefulness	6.428	0.676	.000
Mobile Perceived Financial Resources	Mobile Perceived Ease of Use	3.113	0.676	.002
Mobile Perceived Financial Resources	Mobile Perceived Usefulness	4.268	0.676	.000
Mobile Perceived System Quality	Mobile Perceived Ease of Use	3.497	0.676	.001
Mobile Perceived System Quality	Mobile Perceived Usefulness	1.640	0.676	.104

Based on the results of partial testing in Table 2 it is shown that all hypotheses are proven except for H7 which has not shown a significant effect of the Mobile Perceived System Quality variable on Mobile Perceived Usefulness. This means that there is still a need to improve the quality system of virtual hotel operator mobile application products in Indonesia.

Table 3. F test result

Independent Variable	Dependen Variable	F Value	F table	Significant Value
Mobile Perceived Usefulness, Mobile Perceived Ease of Use	Consumer Intention to Use	95.892	2.68	.000[b]
Mobile Perceived Compatibility, Mobile Perceived Financial Resources, Mobile Perceived System Quality	Mobile Perceived Ease of Use	64.816	2.68	.000[b]
Mobile Perceived Compatibility, Mobile Perceived Financial Resources, Mobile Perceived System Quality	Mobile Perceived Usefulness	67.781	2.68	.000[b]

Based on the results of partial testing in Table 3, it is shown that all simultaneous hypotheses have been proven, where each hypothesis has shown a calculated F value that is greater than the F table, and a

significant number less than 0.05. The coefficient of determination in this study for the effect of mobile perceived usefulness and mobile perceived ease of use on consumer intention to use is 0.617 or 61.7%. For the effect of mobile perceived compatibility, mobile perceived financial resources and mobile perceived system quality to mobile perceived ease of use of 0.622 or 62.2%. Meanwhile, the effect of mobile perceived compatibility, mobile perceived financial resources and mobile perceived system quality on mobile perceived usefulness is 0.633 or 63.3%. Thus, based on the results of research to increase consumer intention to use, it is necessary to pay attention to the factors built in this study.

5. Conclussion

Based on the research results, it shows that the developed model has been able to answer the problem regarding the absence of a model that can be used specifically to measure user acceptance of the Virtual Hotel Operator Application in Indonesia. In addition to supporting the model produced in (Davis, 1989), this study also provides updates by adding several variables through research support (Ooi and Tan, 2016; Tom Dieck and Jung, 2018). The practical benefits obtained from this research are the need to pay attention to the quality factors of the system of a VHO application. With a good quality system, users will feel helped in using the services offered by the VHO application.

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