International Journal of Economics and Business Issues, Volume 1, Issue 1 (2022), 61-76

INTERNATIONAL JOURNAL OF ECONOMICS AND BUSINESS ISSUES

Published by ASTA Research Center

Research Paper

Effect Of Perceived Risk on The Intention to Use Internet Banking by Implementing the Technology Acceptance Model

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ARTICLE INFO

Keywords:
Peceived risk, TAM, internet banking, ease of use, students, attitude, innovation technology, structural equation modeling

E-ISSN: 2958-6429
P-ISSN: 2958-6410

ABSTRACT

This research aims to examine the determinants of intention to use internet banking using the theory of planned behavior. A Survey of 200 university students was conducted to collect data for this research. The data obtained were analyzed using AMOS 18. The hypothesis was tested with the structural equation model, which shows that perceived ease of use, perceived usefulness perceived risk positively influences attitude, and the positive influence of perceived risk, and perceived usefulness have a positive influence on behavior intention to use internet banking. The results emphasize that attitude fully mediated the relationship between perceived ease of use, perceived usefulness, and intention to use internet banking. Besides the practical implication of this research. This work also serves to contribute to the theory of TAM and enrich the literature in this topic. Furthermore, this study also discusses the limitation of the research and shed light to the future research agenda.

1. INTRODUCTION

Intention to use is interesting to study because it is a variable that has a strong influence on actual behavior (Attié & Meyer-Waarden, 2022). Many studies use behavioral intention to predict consumers' intentions toward new technology, for example, Han & Sa (2022), Mao & Hovick (2022), and Oyman, et al. (2022). When a company issues innovations or products that include goods or services that are the results of the development of existing products and products that are truly new, marketing needs to do an analysis related to consumer intentions towards these innovations. Further research also shows that behavioral intention is needed to determine the intention of consumers to use or not use these innovations (Adi et al., 2022).

Theoretically, there are several research models developed to understand consumer intentions towards technological innovation such as Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975, 2011), Innovation Diffusion Theory (IDT) (Rogers, 1983), Theory of Planned Behavior (TPB) (Ajzen, 1985; Ajzen, 1991), Social Cognitive Theory (SCT) Bandura (1986), Technology Acceptance Model (TAM) (Davis, 1989). This research implemented the Technology Acceptance Model (TAM) approach (Davis, 1989) with the object under study is internet banking. The acceptance of internet banking technology has received special attention in academic studies over the past few years as many banks have begun implementing internet banking (Hosein and Nasim, 2009; Baten and Anton, 2010; Susanto & Zo, 2011; Giovanis et al., 2012).

In the last decade, the development of the internet in Indonesia is relatively growing, internet users were only 2 million people while in December 2012 the Association of Indonesian Internet

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Service Providers recorded 63 million people in Indonesia using the internet, which is around 24.23% of the total population of Indonesia (Association Indonesian Internet Service Providers in Happy). The rapid growth of internet users has changed business and social interaction. People usually use the internet for e-mail, read newspapers online, find work information, order tickets, e-shopping, and e-banking (Zhu and Chen, 2012). The internet plays an important role in economic activity, which makes internet banking an important and often researched trend (Giovaniset al., 2012). Internet banking is developing widely following the rapid spread of the internet (Susanto, & Zo, 2011). However, the growth of internet banking in Indonesia is slightly slower than the growth of the internet, so in addition to setting up the system and infrastructure, banks also need to understand what influences consumers to use internet banking (Dena in The Jakarta Post, 2012). The success of internet banking is not only determined by banks or government support, but also by the customer's intention to use internet banking technology (Hosein, 2009).

Internet banking has been used in Indonesia since 1999, which was pioneered by a private bank. Notwithstanding, many banks use internet banking namely Bank Mandiri. Bank Mandiri has a good reputation and is without any issues related to internet banking services. On June 14, 2013 Bank Mandiri was ranked first in the internet banking category by Marketing Research Indonesia and Infobank Magazine. Besides, Bank Mandiri also received various awards in 2013. This proves that Bank Mandiri has a good performance and has gained the trust of the public. In Surakarta, Bank Mandiri has 7 branch offices and 64 independent ATMs scattered in various places. With the facilities provided to the customer in Surakarta, but they have not used internet banking. This shows that it very is needed to understand the acceptance of internet banking by customers in Surakarta.

To understand consumer intention to use internet banking, researchers integrated the TAM (Technology Acceptance Model) with Perceived Risk (Kesharwani et al., 2012; Akturan & Tezcan, 2012; Giovanis, et al., 2012). Thus, this research model consists of 5 variables, namely perceived risk, perceived usefulness, and perceived ease of use, attitude, and intention to use (behavior intention to use). This study adopted TAM as this concept is one of the most considerable models in understanding consumer behavior toward internet banking (Eriksson et al., 2005; Kesharwani et al., 2011; Giovanis et al., 2012). TAM was developed to explain and predict technology use behavior. This theory was developed by Davis in 1989 with a theoretical foundation (TRA) theory of reasoned action, Fishbein and Ajzen (1975). From this theory, the 4 variables used are perceived usefulness (perceived uselessness), perceived ease of use (perceived ease of use), attitude (attitude), and intention to use (behavior intention to use.

Kotler (2009: 189) states that consumers' decision to delay, or refuse to use/buy a product is influenced by perceived risk. In consumer behavior research, perceived risk is defined as the result of actions that can cause unpleasant consequences (Nicolas and Molina, 2008). Bauer in Kesharwani et al., (2011) has defined risk as uncertainty and unfortunate consequences. The risk of reducing consumer intention to use internet banking. Research by Baten et al., (2010) indicates that one of the obstacles to internet banking acceptance in developing countries is the fear of the risk of using internet banking. Previous literature states that risk reduces the intention to accept banking internet technology (Kesharwani et al., 2011). Further research also proves that risk negatively influences the intention to accept internet banking technology (Akturan et al., 2012).

This research aims to address the following question, first, does perceive ease of use affect attitude? Second, does the perception of benefits affect attitude? Third, does the perception of benefits affect the intention to use? Forth, does attitude affect the intention to use? Fifth, does risk perception affect attitude? Lastly, does the perception of risk affect the intention to use? The aim of this is to explain the analysis of the effect of perceived risk, perceived ease of use, and

perceived usefulness on internet banking technology acceptance by Mandiri bank customers in the city of Surakarta. By the formulation of the problem, the objectives of this study are as follows: Explain the effect of perceived ease of use on attitude, Explain the effect of perceived usefulness on attitude, Explain the effect of perceived usefulness on behavior intention to use, Explain the effect of attitude on behavior intention to use, Explain the effect of perceived risk on attitude, Explain the effect of perceived risk on behavior intention to use

An important issue in this study is the factors that influence the behavior intention to use internet banking in Bank Mandiri Surakarta bank customers. In this study, two factors were examined, namely the impact of negative perceived risk and the positive impact of perceived usefulness and perceived ease of use. This study takes the object of research in Bank Mandiri customers that have the potential to use internet banking. The object of this study was chosen based on consideration of the homogeneity of the samples tested and limited scope so that the results of this study were able to explain the phenomenon well.

2. LITERATURE REVIEW

Perceived ease of use is similar to self-efficacy which is defined as the ability of a person to make decisions and act in situations that require the ability he has (Chuttur, 2009). Davis clearly (1989) defines perceived ease of use as a condition where a person feels that no effort is needed whatsoever (free of effort) in using certain technologies. Moreover, perceived ease of use as a condition where consumers feel the ease of using a product of technological innovation (Giovanis, et al. 2012; Kurniawan et al., 2013). Concerning attitude, previous studies have shown significant results of the effect of perceived ease of use on attitude toward using (Akturan et al., 2012; Hsu et al 2013). The ease of use is expected to have a positive influence on attitudes towards internet banking technology. Thus, the first hypothesis is made which states the positive relationship of perceived ease of use to attitude. The following are the hypotheses:

Hypothesis 1: Perceived ease of use has a positive effect on attitude

Davis (1989) defines perceived usefulness as one's belief that using technology will improve or improve performance. This definition follows from the useful definition of the word: which means "able to be used for profit". When technology is deemed to provide benefits, the technology is believed to be of positive value to consumers (Davis, 1989). This positive assessment will shape the attitude and intention to use the technology. Furthermore, Akturan et al., (2012); Giovanis et al., (2012) define it as consumers' assessment of how much positive impact is obtained by using technology. Thus, in this study benefit perceptions are defined as customers' beliefs about the positive benefits gained by using internet banking. Previous research found that attitude has a positive influence on perceived usefulness (Akturanet al., 2012; Hsu et al., 2013). In other words, the more useful a technology is for a person, the more positive his attitude towards that technology will be. Then the second hypothesis will be made which tests the positive effect of perceived of usefulness on attitude toward using. The following are the hypotheses:

Hypothesis 2: Perceived usefulness has a positive effect on attitude

Risk perception is defined as the uncertainty of the outcome of an action (Lu et al., 2005; Akturan et al., 2012). This uncertainty will cause consumers to delay, or refuse to use a product (Kotler, 2009). Kesharwani et al., (2012) define risk perception as the uncertainty that consumers think about before making a purchase. Moreover, Oglethorpe, (1994)

in Zhao et al., (2008) refers perceived risk as consumer's perception of uncertainty and negative consequences that might be received from the purchase of a product or service. Thus, in this study perceived risk is defined as the uncertainty that is perceived by customers in the

use of internet banking. Therefor. the greater the risk perception, the greater the possibility of consumer involvement in purchasing Engel et al., 1995 in Zhao et al., 2008. This condition results in complex decision making which results in a longer decision-making process or even cancelling its intention to consume a product. So marketers need to study the risks that consumers consider in consuming a product. Previous research has shown significant results that perceived risk has a negative effect on attitude (Lu et al., 2005; Akturan et al., 2012). This shows that the greater the perceived risk will negatively affect attitudes. Risk perception is a variable that has a negative influence. Then the research will be made a hypothesis that tests the negative relationship of risk perception on attitudes. The following are the hypotheses:

Hypothesis 3: Perceived risk has a negative effect on attitude

Previous studies have shown a positive relationship of perceived usefulness of behavior intention to use, further research also shows the significant results of this relationship (Giovanis et al., 2012). The greater the perceived benefits of technology, the greater the intention to use the technology. In other words, the perception of benefits has a direct positive effect on the intention to use internet banking. Hence, the fourth hypothesis is the relationship of perceived usefulness to behavior intention to use. The following are the hypotheses:

Hypothesis 4: Perceived usefulness has a positive effect on behavior intention to use

Previous research shows the fact that perceived risk is related to behavioral intention to use (Lu et al., 2005), further research also shows the significant results of the negative effect of perceived risk on behavior intention to use (Giovanis et al., 2012). The greater the risk perception of technology, the lower the intention to use the technology. Prior studies show that in addition to a negative effect on attitude, risk perception also negatively affects the intention to use. Then a fifth hypothesis is made that tests the relationship of risk perspective to intention. The following are the hypotheses:

Hypothesis 5: Perceived risk negatively influences behavior intention to use

Davis (1989), defines attitude toward the system as a level of assessment of the impact obtained when using a particular system in its work. Kottler (2009: 186) defined attitude as a tendency to act based on an evaluation of an object. Further psychology experts (Krauter et al., 2008) formulating attitudes as a tendency to act or not act in certain behavior. In other words, attitude is a positive or negative assessment of an object (Grabner-Kräuter & Faullant, 2008.), namely that a person's attitude towards an object is a feeling of supporting or favorable or a feeling of not supporting or not being favorable (unfavorable) on the object. In this research context, attitude can be interpreted as the tendency of customers to support or reject internet banking technology. The results of previous studies show a significant relationship between the effect of attitude on intention (Lu et al., 2005; Akturan et al., 2012). Previous research shows that attitude is a variable that determines intention (Hosein et al., 2009). Then the higher the attitude towards internet banking technology, the greater the intention to use internet banking technology. Thus the sixth hypothesis in this study states the positive relationship of attitude towards behavior intention to use. The following are the hypotheses:

Hypothesis 6: Attitude has a positive effect on behavior intention to use

3.METHODOLOGY

This study seeks to understand the relationship between the independent variables that act as causes and the dependent variables that play a role. This study aims to provide insight to design technology acceptance strategies. The population in this study is the costumer of Bank

Mandiri in Surakarta. The data were collected through self-distributed survey questionnaires using a convenience sampling method (Sugianto, 2004). The sample of this study consist of 200 respondents who have a Bank Mandiri account and intend to use Bank Mandiri internet banking. Each items were quantified and using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Hypothesis were tested with SEM and all the data were analyzed with Amos 18.

Perceived ease Of Use is operationalized by using five measurement items borrowed from (Chuttur, 2009; Giovanis et al 2012; Kurniawan et al., 2013) namely: clear, simple, easy to understand, easy to use, easy to master. Perceived risk is measured with three-dimension (Featherman & Pavlou, 2003; Luarn et al., 2005 in Akturan et al., 2012), namely, performance risk, perceived financial risk, and security risk. Performance risk is operationalized by using three measurement items namely; slow, useless, Bad, not optimized, and Unreliable. The five items will be measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Financial Risk is operationalized using four measurement items namely expensive, high-price, not affordable, Not Competitive, not profitable. The five items will be measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Security Risk is operationalized by using five measurement items namely; not guaranteed, not trusted, not convincing, Low technology, less safe. Perceived usefulness is operationalized by using five measurement items (Akturan et al., 2012; Giovanis et al., 2012) namely effective, useful, fast Transactions, facilitate transaction, Improve performance. Attitude is operationalized by using five measurement items (Berkowitz in Krauter and Rita 2008) namely like, happy, excited, pleasant, support. Behavior intention to use is operationalized using five measurement items (Davis 1989; Lu et al., 2005; Kesharwani et al., 2011; Giovanis et al., 2012)., namely Intend, Will, tend, Commitment, probable.

3.2. Descriptive statistical analysis

Table 1 described the distribution of the 200 respondents. Table 1 shows that women dominated the respondents in this study as many as 114 respondents (57%). Age is dominated by respondents aged 18-23 years which is equal to 123 respondents (62%). The education items are dominated by high school or equivalent which is 108 respondents (54%). Students also dominated in the study with 84 respondents (42%).

Table 1. Respondents profile

Items	N	(%)
Gender		
Male	86	43%
Female	114	57%
Age		
18 - 23	123	62%
24 - 35	51	26%
36 and above	26	13%
Education		
High school	108	54%
Diploma	28	14%
Bachelor degree	55	28%
Occupation		
Student	84	42%
Government	30	15%
Private sector	53	27%
Enterpreneur	25	13%
other	8	4%

Monthly Income		
Below Rp. 1.000.000	68	34%
Rp.1.000.000 – Rp. 2.000.000	72	36%
Above Rp. 2.000.000	60	30%

* Note. n= Frequency, %= Percentage

4.1. Validity test

Table 2 shows the KMO Measure of Sampling Adequacy (MSA) value in this study is 0.879. Since the MSA value is above 0.5 and the Barlett test value is significant at 0.000 it can be explained that the measurement was valid.

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.879
Bartlett's Test of Sphericity	Approx. Chi-Square	4597.09
	df	496
	Sig.	0.000

Confirmatory Factor Analysis (CFA) was conducted to confirm the items used in this study. Table 3 shows the initial confirmatory factor analysis result before and after reducing items to validate the measurement. The Reduced question items are pe3, pu5, and a5. The results of testing the extracted validity are presented in Table 3.

Tabel 3. Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
pr1	.778						
pr2	.846						
pr3	.790						
pr4	.739						
pr5	.767						
fr1			.767				
fr2			.790				
fr3			.746				
fr4			.770				
fr5			.737				
sr1				.759			
sr2				.622			
sr3				.779			
sr4				.759			
sr5				.757			
pe1							.771
pe2							.823
pe4							.748
pu1						.836	
pu2						.772	
pu3						.797	
pu4						.736	
a1					.817		
a2					.873		
a3					.843		
a4					.829		
bi1		.828					
bi2		.787					
bi3		.828					
bi4		.767					
bi5		.765					

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 7 iterations.

4.2 Reliability test

Table 4 explains that the cronbach's alpha coefficient values for the variables of performance risk, financial risk, security risk, perceived ease of use, perceived usefulness, attitude and behavior intention to use are 0.8994, 0.8999, 0.8998, 0.8045, 0.866, 0.9232 and 0.8989 which are above the reliability criteria (α = 0.6-1.0). These values indicate that the variable performance risk, financial risk, security risk, perceived ease of use, perceived usefulness, attitude, and behavior intention to use are reliable.

Tabel 4. Reliability test result

Variable	Dimension	Cronbach Alpha
Perceived Risk	Performance Risk	0.8994
	Financial Risk	0.8999
	Security Risk	0.8998
Perceived Ease Of Use		0.8045
Perceived Usefulness		0.866
Attitude		0.9232
Behavior Intention to use		0.8989

4.3 Research Data Analysis

The analysis in this study uses the statistical method of the Structural Equation Model (SEM) to examine the relationships of variable relationships so that if one variable is changed, there will be a change in the other variables. In this study, data were processed using the Analysis of Moment Structure or AMOS version 18.0 software.

4.5 Assumptions on Sample Adequacy

The total sample size of 200 fulfills the Maximum Likelihood Estimation procedure, which is sampling between 100-200 samples (Ferdinand, 2005).

4.6 Assumption of Normality

Univariate and multivariate normality conducted to determine the pattern of data distribution that follows or approaches the normal distribution. Table 5 explains that univariate data in this study are non-normal as indicated by a skewness value> 2.58. But multivariate, the data in this study are normal because they have c.r kurtosis below 7 which is 6,468. However, the Maximum Likelihood Estimates (MLE) technique used in this study is not too affected (robust) by multivariate normality deviations (Ghozali and Fuad, 2008).

4.7 Outliers Assumptions

Outliers were evaluated by the Mahalanobis distance value with the degree of freedom of a number of variables used in research at the level of p <0.001. In this study, the number of variable indicators used was 32 variable indicators. Thus, if there is a Mahalanobis distance value greater than $\chi 2$ (32, 0.001) = 62.48 then that value is a multivariate outlier. There are no values categorized as outliers because the Mahalanobis Distance value does not exceed the value of x ^ 2 (32, 0.001) = 62.487. Thus the number of samples to be used remains as many as 200 samples.

4.8 Goodness of Fit Analysis

Table 5 shows that the 775,834 chi-square with 452 degree of freedom is statistically significant at the significance level of 0,000 which is less than 0.05. Thus, there is a difference between the sample covariance matrix and the observed population covariance matrix. A GFI value of 0.815 is a bad indication. An AGFI value of 0.784 is a bad indication. Besides, the TLI value of 0.919 is also an indication that it is not good because it is below the specified standard ≥0.95. A CFI value of 0.926 is a good indication. The RMSEA value of 0.060 met the specified standard ≤2. And the parsimony fit measures index obtained from a CMIN / DF value of 1,716 is a good indication because it has a value of less than 2. Thus, the overall goodness of fit measurement, it can be concluded that the index does not meet the specified index standard is x ^ 2 significance probability, GFI, AFGI, and TLI. This indicates that the model proposed in this study is not accepted. Therefore, the researchers consider modifying the model to form alternative models that have better goodness of fit.

Table 5. Result Of Goodness-Of-Fit Model Test

Criteria	Cut-off Value	Result
x^2 chi square	Expected to be Small	775.834
x^2 significance probability	≥ 0,05	0.000
GFI	≥ 0,90	0.815
RMSEA	≤ 0,80	0.060
AGFI	≥ 0,90	0.784
TLI	≥ 0,95	0.919
Comparative Fit Index (CFI)	≥ 0,90	0.926
Normed Chi Square (CMIN/DF)	< 2,00	1.716

4.9. Model Modification

One of the goals of modification of the model is to obtain acceptable goodness of fit model. Through the output modification indices values, it can be seen whether there is a possibility of modification to the model that can be proposed. To obtain an acceptable model criterion, researchers estimate the correlation between the error term that does not require theoretical justification and which has modification indices greater than or equal to 4.0. This method is done to get the goodness of fit value that meets the requirements. Table 6 shows the result of the modified goodness of fit model. The Chi-Square test, a high value of x ^ 2 indicates that the observed correlation with the predicted one is significantly different, resulting in a small probability. Conversely, a low chi-square value and a significance level greater than 0.05 would indicate no significant difference between observations and predictions. Chi-Square is very sensitive to sample size after modifying the model the probability value becomes good with a probability greater than 0.05 which is 0.054.

Table 6. Result of Goodness-of-Fit after Model modification

Criteria	Result before Modification	Result after Modification
x^2 chi square	775.834	481.434
x^2 significance probability	0.000	0.054
GFI	0.815	0.872
RMSEA	0.060	0.024
AGFI	0.784	0.844
TLI	0.919	0.987
Comparative Fit Index (CFI)	0.926	0.989

Normed Chi Square (CMIN/DF)	1.716	1.112

Normed Chi-Square (CMIN / DF) is the value obtained from the division of the chi-square value of the degree of freedom. This index measures the model's goodness-of-fit relationship with the estimated coefficient coefficients expected to reach the level of conformity. The CMIN / DF value in this model is 1112, indicating that this research model is good. *The Goodness of Fit Index (*GFI) reflects the overall suitability of the model calculated from the squared residuals of the predicted model compared to the actual data. GFI values range from 0-1, where 0 indicates poor fit, and 1 indicates a perfect fit. With the recommended level of acceptance> 0.9 it can be concluded that this research model has a level of unfavorability with a GFI value of 0.872. *Adjusted Goodness of Fit Index* (AGFI) is the development of GFI which is adjusted to the ratio of degree of freedom of the proposed model and degree of freedom of the null model. The AGFI value in this model is 0.844, indicating a poor reception rate. *Tucker Lewis Index* (TLI) is an incremental conformity index that compares the tested model with the null model. Recommended value> 0.95. It can be concluded that the proposed model shows a good level of conformity with a TLI value of 0.987. *Comparative Fit Index* (CFI) is an incremental conformity index that compares the tested model with the null model. The magnitude of this index is in the range of 0 to 1 and values close to 1 indicate the model has a good level of conformity. This index is highly recommended because it is relatively insensitive to the size of the sample and is less influenced by the complexity of the model. By considering the recommended value of> 0.9, the CFI value of 0.989 indicates that this model has a good fit. *The Root Mean Square Error of Approximation* (RMSEA) is a measure used to correct the tendency of chi-square statistics that are sensitive to large sample sizes. Recommended acceptance value <0.08; RMSEA value of the model of 0.024 indicates a good level of conformity. Therefore, based on the overall goodness-of-fit measurement of the research model after the modification process above indicates that the model proposed in this study can be well accepted.

4. Mediation Analysis, Hypothesis Testing and Discussion of Research Results

4.1. Mediation Analysis

The study assumes that the attitude variable mediates the relationship between perceived usefulness, perceived ease of use, and perceived risk, to partial intention to use behavior. To examine the effect of mediation, two structural equation models are compared using Amos 18. The first model is a theoretical model that attitude mediates the relationship between perceived usefulness, perceived ease of use, and perceived risk, on partial behavior intention to use. The second model explains that attitude mediates the relationship between perceived usefulness, perceived ease of use, and perceived risk, to behavior intention to use fully (fully mediated), for the results of the analysis shown in Table 7.

Table 7. Mediation analysis

Hypothesis	Partially Mediated Model	Fully Mediated Model	Direct Effet Only Model
Perceived Easy Of Use → Atittude	0.105	0.108	
	(-1.39)	(-1.449)	
Perceived Usefulness → Atittude	0.42	0.429	
	(5.199)***	(5.296)***	
Perceived Risk → Atittude	-0.22	-0.227	
	(-2.32)**	(-2.437)**	
Perceived Usefulness →Behavior Intention To Use	0.3		0.279
	(3.421)***		(3.080)**
Perceived Risk →Behavior Intention To Use	-0.24		-0.252

	(-2.42)**		(-2.487)**
Atittude → Behavior Intention To Use	0.349	0.586	0.341
	(3.977)***	(7.419)***	(3.866)**
Perceived Easy Of Use → Behavior Intention To Use			0.069
			(-0.867)

Table 7. Mediation analysis (Continued)

	Partially Mediated Model	Fully Mediated Model	Direct Effet Only Model
chi square	481,434	502.759	480.69
significance probability	0,054	0.014	0.053
DF	433	435	432
GFI	0.872	0.867	0.873
CFI	0.989	0.985	0.989
PCFI	0.863	0.863	0.861
PNFI	0.787	0.787	0.785
SMC for Atittude	0.314	0.326	
SMC for Behavior Intention To Use	0.371	0.282	0.373

Note: *p<0,05; **p<0,01; *** p<0,001

Gwinner's et al (2003) identified four criteria for comparing two models in SEM, namely: The first criterion to compare is Model fit as measured by CFI. Based on the analysis results in table 7 the results show that partially mediated models are better models for representing data. The values for the two models are almost equivalent in overall fit statistics. However, the value of the fit statistics of the partially mediated model is higher when compared to the fully mediated model. In partially mediated CFI = 0.989 and GFI = 0.872 while for fully mediated models the values of CFI = 0.985 and GFI = 0.867. The second criterion is the percentage of significant hypotheses. In the partially mediated model, of the six hypotheses, three were significant at p <0.001 or 50%, and there were two significant at p <0.01 or 33.3% and one that was not significant or 16.6%. Hypotheses were significant in the fully mediated model, at p <0.001 as many as two of the four hypotheses or at 50%, and there was one at a significance of p <0.05 or 25% and one hypotheses were insignificant or at 25%. With the presentation of a larger significant hypothesis, the partially mediated model is better than the fully mediated model. The third criterion compared is squared multiple correlations (SMC), which is the ability of the model to explain the variance in measured results. In partially mediated models, SMC for Attitude 0.314, and SMC for Behavior Intention to Use 0.371. As for the fully mediated model, SMC for Attitude 0.326, and SMC for Behavior Intention to Use 0.282. From this measurement, it can be concluded partially mediated model, better because it has a higher value. The fourth criterion is parsimony (parsimony-adjusted NFI and parsimony-adjusted CFI). For this criterion between partially mediated models and fully mediated models have the same value. Namely PNFI = 0.787 and PCFI = 0.863.

Therefore, based on the four criteria, the results are obtained that the partially mediated model is a model that more accurately describes the relationship between constructs. Thus, it can be concluded that the attitude variable mediates the relationship between the variables perceived usefulness, perceived risk, and perceived ease of use on the behavioral intention to use partially.

4.2. Hypothesis testing

Hypothesis testing is done by analyzing the significance level of causality relationships between constructs in the model based on C.R. (z-count) is greater than or equal to the value of z-table (z-count ^{3} z-table). If the number of respondents is more than 120, the z table values for each level of significance are 1% for CR ≥ ± 2.56; 5% for CR values ± 1.96, 10% for CR values ± 1.645. Analysis of the relationships between constructs in the hypothesis is shown by the regression weights value table8.

Table 8. Significant Level

	Regression Weights			
Path	Estimate	S.E.	C.R.	P
VD: Atittude				
Perceived easy of Use → Atittude	0.105	0.075	1.393	0.164
Perceived Usefulness → Atittude	0.420	0.081	5.199	***
Perceived Risk → Atittude	-0.217	0.093	-2.322	0.02
VD: Behavior Intention to Use				
Perceived Usefulness →Behavior Intention to Use	0.300	0.088	3.421	***
Perceived Risk →Behavior Intention to Use	-0.244	0.101	-2.421	0.015
Atittude → Behavior Intention to Use	0.349	0.088	3.977	***

5. DISCUSSION

Relationship between perceived ease of use and attitude (H1). The results that show the CR is less than 1,645 (CR = 1,393) and also with a value of P = 0.164 means that the H1 hypothesis is rejected. This explains that perceived ease of use does not affect attitude. The phenomenon explained from the test results is that the ease of use of internet banking technology does not affect Bank Mandiri customers to use internet banking services. So if marketers want to make customers want to use internet banking it is recommended not through the ease of use.

The results of this study do not support previous studies that show a significant relationship between perceived ease of use and attitude (Lorenzo-Romero et al., 2011; Huang, 2008). But research supports previous research which states that perceived ease of use does not significantly influence attitude (Akturan et al., 2012; Aboelmaged et al., 2013). An insignificant relationship has occurred because customers, who are mostly students, and private employees who are relatively accustomed to using information technology so that the ease-of-use factor does not affect consumer attitudes towards internet banking services.

Relationship between perceived usefulness and attitude (H2). The test results indicate a significant and positive relationship between perceived usefulness and attitude. Values β = 0.42, and CR = 5.199, these values indicate that the H2 hypothesis is supported. With CR = 5,199 indicating the hypothesis is accepted at a significant level of 0.01, the confidence level is 99%. This means that the higher the benefits obtained, the better the attitude of consumers towards internet banking services. Perceived usefulness is one of the important factors to predict consumer attitudes. Significant results between perceived usefulness and attitude provide support for the results of previous studies which stated a significant and positive relationship between the two variables (Lu et al., 2005; Akturan et al., 2012; Aboelmaged et al., 2013), namely the higher the perception consumers about the benefits obtained, the better the attitude of consumers towards a product. Marketers can shape the positive attitude of Bank Mandiri customers towards internet banking services by increasing the benefits that can be obtained from internet banking services. Bank Mandiri internet banking services are known to provide

benefits to customers, so consumers' views of the benefits obtained must be improved because competition in the banking business is relatively tight. Maintaining a positive perception of the benefits of internet banking needs to be balanced with a variety of other factors.

The relationship between perceived risk and attitude (H3). The test results are shown by the value of β = -0.217, and CR = -2.322 explains a significant and negative relationship between perceived risk and attitude. The value of CR = -2,322 shows that the hypothesis H3 is accepted at a significant level of 5%. A negative relationship means that the higher the risk perception, the lower the consumer's attitude towards internet banking services. Perceived risk is one of the factors to predict consumer attitudes. The results of testing the third hypothesis are supported by previous research (Lu et al., 2005; Krauter and Rita, 2008; Akturan and Nuray, 2012) which stated a negative and significant relationship of perceived risk to attitude. For marketers, this provides an understanding of the need to minimize customer perceptions about risks in using internet banking services. In this case, it is necessary to pay attention to the financial risks thought by customers regarding internet banking services by providing an understanding of how to minimize security risks, which can be undertaken by customers and increasing protection for Bank Mandiri internet banking services. Furthermore, an independent bank needs to improve the performance of internet banking services to minimize negative perceptions related to the performance of internet banking services. With this, it is expected that perceived risk can be minimized.

Relationship between Perceived usefulness and behavior intention to use (H4). The test results show β = 0.300 and CR = 3,421 indicating a significant and positive relationship between perceived usefulness and behavior intention to use. CR = 3,421 explains the hypothesis 4 accepted at the significant level of 5%. This phenomenon shows that hypothesis H4 is supported. This means the higher the benefits, the better the customer's intention to use internet banking services. Perceived usefulness is one of the important factors to predict customers' intention to use internet banking services. With a standardized regression weight of 0.282, it shows that behavior intention to use is influenced by perceived usefulness of 28.2% and 71.8% is influenced by other variables. The results of this test are supported by previous studies that show a positive and significant relationship between perceived usefulness and behavior intention to use, (Romero et al., 2011; Giovanis et al., 2012; Hsu et al., 2013). A positive and significant relationship of perceived usefulness towards behavior intention to use proves that the intention of Bank Mandiri customers to use internet banking services is influenced by the benefit of use. Consumers who find useful internet banking services will intend to use internet banking services. Based on this research, marketers can increase the intention of consumers to use internet banking services by increasing the benefits obtained by using internet banking services. The benefits of internet banking provided by other banks can be considered to increase the customer's intention to use internet banking services.

Relationship between Perceived risk and behavior intention to use (H5). The test results show a significant and negative relationship between perceived usefulness and behavior intention to use (β = -0.244 and CR = -2.421). The value of CR = -2.421 shows that the hypothesis H5 is accepted at a significant level of 0.05, the confidence level is 95%. With the results that support the H5 hypothesis means the higher the perceived risk, the lower the intention of customers to use internet banking services. Perceived risk is one of the important factors to predict customers' intention to use internet banking services. The results of this test provide support for previous studies that show a negative and significant relationship between perceived risk and behavioral intention to use, (Lu et al., 2005; Giovanis et al., 2012; Akturan et al., 2012). The

negative and significant relationship of perceived risk to behavior intention to use proves that the intention of Bank Manidiri customers to use internet banking services is influenced by the perceived risk that might occur due to the use of internet banking services. As a company engaged in banking services, Bank Mandiri must be able to minimize negative perceptions about the risks of internet banking services. Maximized risks include risks related to internet banking performance (performance risk), financial risks, and risks related to internet banking service security (security risk). When customers feel a small risk, the customer's intention to use internet banking services will be even higher.

Relationship between Attitude and Behavior Intention To Use (H6). The test results show β = 0.349 and CR = 3.977. The results of the testing indicate a significant and positive relationship between perceived usefulness and behavior intention to use. CR value = 3421 explains the hypothesis H4 accepted at the 5% significant level which means the confidence level is 95%. This phenomenon shows that the higher the customer's attitude towards internet banking services, the better the customer's intention to use it. Perceived risk is one of the important factors used to predict customer intentions to use internet banking services. With a standardized regression weight value of 0.315, it shows that behavior intention to use is influenced by perceived usefulness of 31.5% and 68.5% is influenced by other variables. The results of this test are supported by previous studies that show a positive and significant relationship between attitudes and behavior intention to use, (Romero et al., 2011; Lu et al., 2005; Akturan 2012). Thus, attitude variable is a variable that marketers can consider in increasing the intention of independent tire customers to use internet banking services. This can be through the stimulus to customers related to the variable perceived usefulness and perceived risk considering that attitude is a mediating variable.

6. Conclusion

Author concluded that the perceived usefulness and perceived risk variables influence behavior intention to use both directly and partially on independent bank customers. This provides an understanding for Bank Manidri to examine the benefits and risks of internet banking services so that in the end it can increase their intention to use internet banking services. These findings indicate that the model is still complex and there is a great diversity of models in the formation of behavior intention to use internet banking.

The study carried out on Bank Mandiri customers in the Surakarta on the effect of perceived risk on the intention to use internet banking with the Technology Acceptance Model (TAM) approach is expected to be able to provide theoretical implications, practical implications, and implications for further studies. The implications of this study are also expected to provide input to marketers regarding the efforts that should be made related to the problem under study. First theoretical implication, this research is expected to increase the understanding of academics in the acceptance of technological innovations aspect. Acceptance of technological innovations in this study was raised in the behavioral intention to use variable by using different observational variables from previous studies, this is based on research showing the diversity of variables in the formation of behavior intention to use (Lu et al., 2005; Kesharwani et al., 2011; Giovanis et al., 2012; Akturan et al., 2012; Hsu et al 2013). Through this research, it can be seen that the observed variables are modeled and adjusted to the research settings in Indonesia. This research is expected to be a subject of discussion which can then be further developed and tested in different research settings. Second practical Implications, this study is expected to provide marketers with an understanding of the concept of internet banking technology acceptance with the Technology Acceptance Model (TAM) approach. Understanding the concept of acceptance of technological innovation can provide marketers with a broader perspective that can be used to design stimuli that are possible to increase the acceptance of technological innovation.

Stimulus in question is related to efforts to form behavioral intention to use, namely perceived usefulness and perceived risk. Banks must minimize the risk of using internet banking by doing things such as giving clear guidelines in the event of fraud/fraud in Internet Banking, addressing logs / time records and the location of the last log in to minimize the risk of someone else's account being opened. To increase perceived usefulness, it can be done by adding online store links that are connected to Bank Mandiri so that customers do not need to use Paypal or similar online payment services. However, this needs to be examined because over-designing these stimuli can have an impact on the ineffectiveness of the developed marketing strategy.

This study has the object of observation which is focused on Mandiri Bank internet banking so that the impact of the study generalization is limited. Thus, to apply this study to different contexts, attention is needed in examining the characteristics of the products attached to the object of research. This is necessary so that there is no bias in the results of testing that can have an impact on the errors in understanding the research implications. This research focuses on research settings in Surakarta, so it may not be able to represent the behavior of technology acceptance in various settings in Indonesia. So that for applications in different settings requires carefulness and caution. Although there are limitations in this study that cause the inability of the model to be generalized in all situations, but with a structured testing procedure it is expected not to reduce the degree of confidence in the accuracy of the model. The object of observation in this study is focused on internet banking services so that the impact on the generalization of studies is limited. This provides opportunities for further studies to develop models in a broader context. However, caution is needed in observing the characteristics inherent in the object of the study being observed.

REFERENCE

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), Action-control: From cognition to behavior (pp. 11- 39). Heidelberg, Germany: Springer.

Ajzen, I. (1991). The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, 50, 179-211.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*, 665-683.

Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence & Planning*.

Adi, S., Irawan, B., Suroso, I., & Sudaryanto, S. (2022). Loyalty-based sustainable competitive advantage and intention to choose back at one bank.

Attié, E., & Meyer-Waarden, L. (2022). The acceptance and usage of smart connected objects according to adoption stages: an enhanced technology acceptance model integrating the diffusion of innovation, uses and gratification and privacy calculus theories. *Technological Forecasting and Social Change*, *176*, 121485.

Bandura A. Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall;1986

Baten, M. A., & Kamil, A. A. (2010). E-banking of economic prospects in Bangladesh. *Journal of internet Banking and Commerce*, *15*(2), 1-10

Carlota Lorenzo-Romero, Efthymios Constantinides, Marı´a-del-Carmen Alarco´n-del-Amo (2011), Consumer adoption of social networking sites: implications for theory and practice,

Journal of Research in Interactive Marketing, Vol. 5 No. 2/3, DOI 10.1108/17505931111187794

Chuttur, M. (2009), "Technology acceptance, information system deployment, TAM, information system theory*", Sprouts,* Vol. 9 No. 2009, pp. 9-37, available at: http://sprouts.aisnet.org/9-37

Chuttur, M. (2009). Overview of the technology acceptance model: Origins, developments and future directions.

Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", MISQuarterly, Vol. 13 No. 3, pp. 319-340.

Eriksson, K., Kerem, K., & Nilsson, D. (2005). Customer acceptance of internet banking in Estonia. *International journal of bank marketing*.

Engel, J.F., Blackwell, R.D. and Miniard, P.W. (1995) Consumer Behavior, 8th, Dryder, New York

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. International Journal of Human-Computer Studies, 59(4), 451e474.

Ferdinand. (2005). *Metode Penelitian Manajemen* [Reseach method for Management]. Edisi 2. BP Universitas Diponogoro : Semarang

Fishbein, M., & Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*. Psychology Press.

Giovanis, A.N., Binioris, S. and Polychronopoulos, G. (2012), "An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece", EuroMed Journal of Business, Vol. 7 No. 1, pp. 24-53. https://doi.org/10.1108/14502191211225365

Ghozali, I. & Fuad. (2008). *Structural Equation Modeling*. Semarang: Universitas Diponegoro.

Grabner-Kräuter, S. and Faullant, R. 2008. Consumer Acceptance of Internet Banking: The Influence of Internet Trust. International Journal of Bank Marketing, 26 (7): 483-504.

Han, J. H., & Sa, H. J. (2022). Acceptance of and satisfaction with online educational classes through the technology acceptance model (TAM): The COVID-19 situation in Korea. *Asia Pacific Education Review*, *23*(3), 403-415

Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International journal of bank marketing*.

Kotler, P., & Caslione, J. A. (2009). How marketers can respond to recession and turbulence. *Journal of Customer Behaviour*, *8*(2), 187-191.

Kurniawan, T. A., de Oliveira, J. P., Premakumara, D. G., & Nagaishi, M. (2013). City-to-city level cooperation for generating urban co-benefits: the case of technological cooperation in the waste sector between Surabaya (Indonesia) and Kitakyushu (Japan). *Journal of cleaner production*, *58*, 43-50.

Hosein, N. Z. (2009). Internet banking: An empirical study of adoption rates among Midwest community banks. *Journal of Business & Economics Research (JBER)*, *7*(11).

Mao, C. M., & Hovick, S. R. (2022). Adding affordances and communication efficacy to the technology acceptance model to study the messaging features of online patient portals among young adults. *Health Communication*, *37*(3), 307-315.

Mohamed Gamal Aboelmaged and Tarek R. Gebba (2013), Mobile Banking Adoption: An Examination of Technology Acceptance Model and Theory of Planned Behavior, *International Journal of Business Research and Development,*Vol. 2 No. 1, pp. 35-50 (2013)

Oglethorpe, J. E., & Monroe, K. B. (1994). Determinants of perceived health and safety risks of selected hazardous products and activities. *Journal of consumer affairs*, *28*(2), 326-346.

Oyman, M., Bal, D., & Ozer, S. (2022). Extending the technology acceptance model to explain how perceived augmented reality affects consumers' perceptions. *Computers in Human Behavior*, *128*, 107127.

Rogers, E. M. (1983). Diffusion of innovations. Third edition. New York. Free Press

Susanto, A., & Zo, H. (2011). Factors Influencing Users' Acceptance in Internet Banking Success: Proposing a Unified Model.

Zhao, A. L., Hanmer-Lloyd, S., Ward, P., & Goode, M. M. (2008). Perceived risk and Chinese consumers' internet banking services adoption. *International journal of bank marketing*.

Zhu, Y. Q., & Chen, H. G. (2012). Service fairness and customer satisfaction in internet banking: Exploring the mediating effects of trust and customer value. *Internet Research*.