Comparative Analysis of Perceived Ease of Use and Perceived Security Level in Usage Decision E-Banking in the Millennial Generation

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ABSTRACT

Mobile Banking in life in the Digital 5.0 Era is now very commonly used, including by the Millennial Generation. Perceived ease of use and perceived security levels determine the decision-making using mobile banking in the millennial generation. This study aims to compare the decision to use e-banking and whether there is a difference between the perceived ease of use and perceived security level in the millennial generation. Sampling was done by purposive sampling method. Respondents are consumers of the millennial generation. Data analysis was performed using an independent t-test. The study results show a significant difference of 46.62% between perceived ease of use and perceived security level in deciding to use e-banking in the millennial generation.

Keywords: Perceived Ease of Use; Perceived Security Level; Usage Decision, Experience

INTRODUCTION

In the current disruptive era, every company must be able to innovate continuously to maintain its existence in the business industry, including in the banking industry. Rapidly evolving business capabilities demand aggressive implementation of technology adoption. Meanwhile, consumers will adopt technology if the technology is felt as perceived ease of use which will eventually become the cause of perceived usefulness. E-Banking Adoption could be an opportunity for customer value co-creation (Carranza et al., 2021). E-Banking activities could also support competitive advantages and increase bank revenue through fee-based income. Thus every bank competes to create e-banking products and services that are easy to access, safe, and confidential for consumers. The Digital 5.0 era forces humans to be responsive to digitalization. Not only the baby boomers generation and X generation, but the millennial generation also has a natural ability to master techniques such as multitasking capabilities in using digital devices (Zis et al., 2021), especially generation Z, who have been exposed to internet technology and mobile phones from an early age (Francis & Hoefel, 2018; Sakitri, n.d.). Problems occur when the millennial generation who are proficient in technology trust and adopt a fintech application based solely on the perceived ease of use and promotion of a product, compared to the application's security level (Nangin et al., 2020). However, according to research results (Wilson et al., 2021) perceived ease of use and perceived security level are very important in providing customer satisfaction and the customer's desire to reuse the product. The perceived security level in using applications, especially fintech applications such as e-banking, is fundamental to avoiding cybercrime, cloning transactions, and other

cases of balance theft. The purpose of this study is to compare whether there is a significant difference between perceived ease of use and perceived security level in using a type of e-banking in the millennial generation.

LITERATURE REVIEW
Perceived Ease of Use
Perceived ease of use is interpreted as "the degree to which a person believes by using a technology will be effort-free" (Hamid et al., 2016). The concept of perceived ease of use indicates a level where an individual has confidence that using an information system will be easier and more practical and no longer requires great effort in its use. Based on the results of research (Ermawati & Delima, 2016), perceived ease of use has a positive and significant effect on the interest of taxpayers to use the E-Filing. The indicators of perceived ease of use for an information system according to (Davis, 1989) include:
1. Clear and understandable, namely the information system has a clear appearance and is easy to understand and easy to learn.
2. Controllable, which is an information system that is easy to operate.
3. Simple and time-saving, namely using the information system is very easy and has the principle of time efficiency.
4. Easy to become skillful, the information system will add skills to users.
5. Flexible

Perceived Security Level
The perceived security level is a trust owned and felt by users where their personal information is confidential in both civil and monetary terms (Flavia'n C & M. Guinali'u, 2006). Thus personal data cannot be seen, stored, or even manipulated by any party that is unrelated to the individual. Therefore, the perceived security level is subjective. Furthermore, according to (Lim et al., 2010) security is the most important and prominent factor in the distribution of Mobile Banking services, with a good level

of security will automatically increase customer confidence to start using and continuing to use Mobile Banking. The higher the perceived security level provided by the Bank to its customers, the higher the user's decision to transact using the services and facilities provided in Mobile Banking.
The indicators of the perceived security level (Laudon & Traver, 2014) are as follows:
1. integrity
    Integrity indicates complex things. Websites accessed via the internet must display honest and reliable information and may not be changed without the permission of the responsible party and the owner of the authority.
2. Nonrepudiation
    Nonrepudiation is the prevention of denial. This means that one of the parties does not renege on the agreement that was made after the transaction, for example, refusal of certain orders or refusal of payment of arrears.
3. Authentication
    Authentication refers to authenticity. This means that the e-banking system can immediately identify access restrictions for other individuals and provide true information.
4. Confidentiality
    Confidentiality is secrecy. It means an e-banking system able to ensure that only authorized parties have access to specific data such as the customer.
5. Privacy
    Privacy is an effort to protect consumer personal information from unauthorized persons to access it.
6. Availability
    Namely ensuring that the available information system services are linked to existing functions and information. In other words, the network owned by e-banking does not often experience offline which is generally caused by network disturbances.

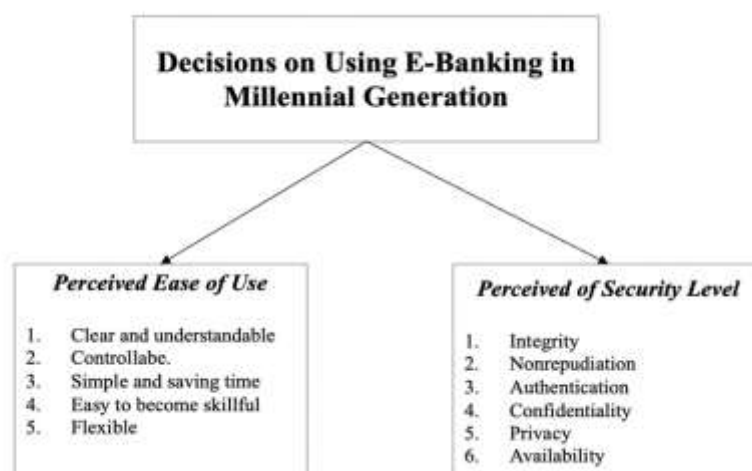The conceptual framework built in this study is as follows.

Figure 1. Conceptual Framework

We, therefore, hypothesize that:

H0: There is no significant difference between perceived ease of use and perceived security level in deciding to use e-banking in the millennial generation.

H1: There are significant differences between perceived ease of use and perceived security level in deciding to use e-banking in the millennial generation.

MATERIALS & METHODS

The population of respondents in this study is all the millennial generation in Medan City, represented through the Y and Z generations. The millennial generation was born in 1980-1995 and 1996-2015. The sampling was carried out using a purposive sampling technique. The criteria for respondents are: 1) respondents are in the age range of the millennial generation; 2) the respondent has a personal mobile banking application, and 3) the respondent has used Mobile Banking for at least 3 transactions. A total of 30 respondents were taken as a sample. Data analysis was performed using an independent t-test with GraphPad Prism version 9.4.1 software.

Furthermore, primary data collection was carried out using a questionnaire. The distribution of questionnaires using Google Forms. The measurement uses a Likert Scale using A five-point scale, from 1 'strongly disagree' to 5 'strongly agree'. The statements for the perceived ease of use variable used in this study are shown in Table 1.

Table 1. Perceived Ease Of Use Variable Question Items

No	Questionnaire Item Statement
Clear and Understandable	
1	Mobile Banking is easy to understand because the operating system is not complicated
2	The features available in Mobile Banking are very clear so that they are easy to understand and use
controllable	
3	Mobile Banking provides easy navigation to move to the next page
4	Mobile Banking is easy to operate because it has worked with various e-wallets and merchants
Simple and time-saving	
5	Transactions using Mobile Banking can be completed in a short time thereby saving time
6	Mobile Banking is very helpful in urgent transaction activities
Easy to become skilled	
7	The use of Mobile Banking adds skills to users in using information systems
8	After using Mobile Banking, users switch from cash payments to non-cash payments
Flexible	
9	The use of Mobile Banking is very practical and flexible to carry compared to cash
10	The use of Mobile Banking is not limited by anything, it can be done anytime and anywhere

Furthermore, the list of statements used to measure the variable perceived level of security is measured by the questionnaire items in Table 2 below.

Table 2. Question Items Perceived Variable Of Security Level

No.	Questionnaire Item Statement
integrity	
1	Mobile Banking ensures that there are no changes to any information without the approval of the responsible party
2	The user is the only one responsible for granting permission to either change or add certain information
Nonrepudiation	
3	Mobile Banking protects against the risk of fraud and financial loss for every user
4	Mobile Banking ensures that there will be no denial regarding the agreement that was made after the transaction between the two parties
Authentication	
5	Mobile Banking always ensures that the information that users provide is real data
6	Mobile Banking can immediately detect if there is access other than the account owner
Confidentiality	
7	Mobile Banking can keep my data confidential and not disseminate it to anyone who is not concerned
8	Mobile Banking can protect and guarantee the security of each user's balance
privacy	
9	I feel safe when providing my personal information for the verification process during the Mobile Banking service
10	Mobile Banking protects information related to my Bank card and all online payments
Availability	
11	Mobile Banking provides security guarantees in the form of the registration of the related Bank at OJK
12	Mobile Banking provides complete information regarding balances, transfers, and information that the user wants

RESULT

Based on the results of a study conducted on 30 millennial-generation e-banking user respondents, it is known that the majority of respondents in this study consist of women, several 73.4%, and men 26.6%. Concerning age, the largest group in this study is age≥ 15-25 years of age 93.4% namely generation Z and the rest are aged≥ 26-35 years and ≥ 36-45 years each by 3.3%. In addition, the majority of the professions of respondents are students at 73.4%, followed by the profession as private employees and self-employed at 10%, respectively. Hence, the majority of revenue is in≥ IDR 500,000 to IDR 1,500,000 in the amount of 63.3%, followed by the second largest namely> IDR 3,600,000 in total 16.7%, and on earnings≥ IDR 1,600,000 to IDR 2,500,000 in the amount of 13.3%. Furthermore, the majority of customers use mobile banking for >1 year 60%, and for ≥ 6 months - 1 year by 23.3%. While the rest ≥ 3 months - 6 months amounted to 10% and < 3 months amounted to 6.7%. The number of respondents used to compare opinions in column A regarding perceived ease of use, and column B regarding perceived security level 30 respondents.

Table 3. Descriptive Analytic Results

Gender	Count of Gender
Man	26.6%
Woman	73.4%
age	**Count of Ages**
≥ 15-25 years	93.4%
≥ 26-35 years	3.3%
≥ 36-45 years	3.3%
Occupation	**Count of Occupations**
Miscellaneous	3.3%
housewife	3.3%
Private employees	10%
Student / Student	73.4%
Self-employed	10%
Income	**Count of Income/ Salary Per Month**
> IDR 3,600,000	16.7%
≥ IDR 1,600,000 to IDR 2,500,000	13.3%
≥ IDR 2,600,000 to IDR 3,500,000	6.7%
≥ IDR 500,000 to IDR 1,500,000	63.3%
month	**Count of Time to Use Mobile Banking**
< 3 months	6.7%
> 1 year	60%
≥ 3 months - 6 months	10%
≥ 6 months - 1 year	23.3%
Data analyzed	
Sample size, column A	30
Sample size, column B	30

Hypothesis Analysis

Before testing the hypothesis using the independent t-test, a classic assumption test must be performed first, namely the normality test. The results of the normality test for the variables perceived ease of use and perceived security level are shown in Figure 2.
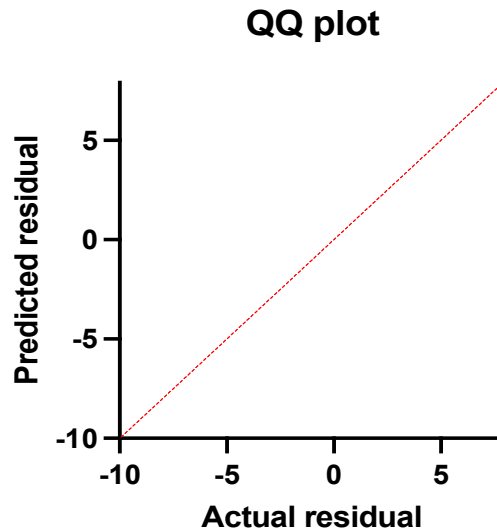
QQ plot

Figure 2. Normality Test Results

Based on Figure 2, it is known that the data is in accordance with the normality test assumptions. This is shown by plots that follow along the diagonal line. Thus the data meets the requirements to proceed to the next stage, namely testing the independent t-test. The comparison of the unpaired t-test data for perceived ease of use (PEOU) and perceived security level (PSL) is shown in Figure 3 below.
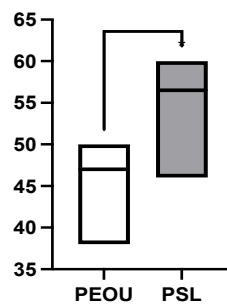

Figure 3 Unpaired t-test Perception Comparison

Based on Figure 3, it can be seen that the total value of the unpaired t-test on the perceived security level (PSL) variable is much higher than the perceived ease of use (PEOU) variable. In summary, this shows that the perceived security level (PSL) variable is considered more decisive in the decision to use e-banking in the millennial generation than the perceived ease of use (PEOU) variable. In detail, the results of the unpaired t-test on these two variables are shown in Table 4.

Table 4 Independent T-Test Test Results

Unpaired t-test	Results
P-value	<0.0001
P-value summary	****
Significantly different (P < 0.05)?	Yes
One- or two-tailed P value?	Two-tailed
t, df	t=7.118, df=58

Table 4 shows the Independent T-Test testing stage has a p-value of <0.0001. This

shows that the p-value is 0.0001 <0.05. Thus, there is a significant difference between the variable's perceived ease of use and perceived security level. Meanwhile, how big the difference between variables is shown in Table 5.

Table 5 The Difference between Variables

How big is the difference?	
Mean of column A	46.00
Mean of column B	54,43
Difference between means (B - A) ± S.E.M	8.433 ± 1.185
95% confidence intervals	6.062 to 10.81
R squared (eta squared)	0.4662

In Table 5, it can be seen that the average value of column A, namely the average value of perceived ease of use, is 46.00. While the average value of column B which represents the perceived security level is 54.43. This is in line with Figure 3 where the value of column B > column A or the value of perceived security level > perceived ease of use with a confidence interval of 95%.

Furthermore, the value of R Squared is 0.4662. This indicates that the difference between the two variables is 46.62%. This difference has a fairly high meaning. This is in line with the results of the study(Li et al., 2021)shows that security is one of the significant factors influencing customer satisfaction in using Internet banking services. Even so, perceived ease of use and perceived usefulness are positively related to attitudes toward using e-banking (Carranza et al., 2021). Likewise, research results (Ermawati & Delima, 2016) that perceived ease of use influences interest in using the e-filing system.

CONCLUSION

Rapidly evolving business capabilities demand aggressive implementation of technology adoption. Meanwhile, consumers will adopt technology if the technology is felt perceived ease of use which contains the dimensions of clear and understandable, controllable, simple and time-saving, easy to become skillful, and flexible. Furthermore, consumers also prioritize the perceived level of security where a technology such as e-banking must be able to have the dimensions of integrity, non-repudiation, authentication, confidentiality, privacy, and availability. Thus, each bank competes to create e-banking products and services that are easy to access, safe and confidential for consumers.

The two important things above the perceived ease of use and the perceived security level is an important factors for decision-making in the use of e-banking, including for the millennial generation. In this case, the millennial generation is all the generations after generation X. Differences in character between generations generally trigger the decision-making process. Generation Y, which generally prioritizes perceived security level or security trust in using mobile banking applications (Yussaivi et al., 2021), as well as generation Z which is generally born as a natural generation of technological growth (Francis & Hoefel, 2018; Zis et al., 2021) which prioritizes perceived ease of use (Istiarni & Hadiprajitno, 2014). Security facilities are able to increase customer satisfaction (Nia et al., 2022). Even though proficient in technology, research (Wijaya & Ekayasa, 2022) shows that Generation Z is no longer making informed decisions perceived ease of use but on price considerations.

The results showed a significant difference between perceived ease of use and perceived security level in deciding to use e-banking in the millennial generation. The difference between the two variables is 46.62%. This difference has a fairly high meaning. Where the millennial generation has a fairly high perception of perceived security level compared to perceived ease of use.

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