Determinants of User Trust in Financial Technology Usage in Indonesia

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Abstract
The objective of this research is to examine the variables that influence the level of user confidence when utilizing Financial Technology (Fintech) in Indonesia. There are six hypotheses tested, each of which links the variables of perceived security, knowledge, ease of use, and user experience with user trust in Fintech. Data was collected from respondents who have used Fintech in Indonesia and analyzed using SmartPLS 4 software. The outcome of the research indicated that security perception significantly and positively influences ease of use, while knowledge has a positive and significant impact on user experience, and user experience positively and significantly affects Trust. Nonetheless, the study found no significant influence of security perception and knowledge on trust. The implication of these results suggests that Fintech companies operating in Indonesia should consider these factors to promote user trust in their services.

Keyword: financial technology; security perception; PEOU; knowledge; user experience; trust
1. Introduction

Nowadays, technological developments have affected various sectors of human life, one of which is in the financial sector. Technological developments in this field can have a significant impact on individuals or organizations in accessing, managing, and using financial services. The presence of fintech brings convenience, efficiency, and better accessibility, especially for consumers. In Indonesia itself, the development of fintech is quite rapid, this is supported by the presence of peer-to-peer lending or fintech lending providers licensed at the Indonesian Financial Services Authority (OJK) as many as 101 companies with total assets of Rp7,419 billion in the period August 2023 (OJK, 2023).

But in a potential development, of course, new problems will arise that become challenges for fintech companies. Public interest in the presence of this financial technology innovation will be the essence of this research. Many factors need to be considered as consumers before starting to take up and utilize fintech services such as the security of their data, the ease of use of the application, their knowledge of finance, and their trust in the fintech service.

Hence, to gain a more comprehensive understanding of the factors influencing individuals' inclination to embrace fintech, this research examines the underlying factors of security perception, financial knowledge, ease of use, and user experience in shaping user trust. This, in turn, fosters their enthusiasm for embracing fintech services and sustaining their utilization of these services.
2. Literature Review

2.1 Security Perception

Perceived security refers to how far users feel confident that the transactions or information exchanges they make are safe (Zhang et al., 2019). Perceived security has different meanings, but in this context, perceived security is a condition where users are confident in the security of a system or application they use (Tahar et al., 2020). Denaputri, A., & Usman, O. (2019) further explains that perceived security refers to the level of protection that customers believe they have from threats such as data leaks to fraud. Security perceptions can be impacted by different things such as attitudes towards security, the experience with security features, and other features. Perceptions of security also refer to perceptions of risk and privacy concerns (Hermawan et al., 2021). The fundamental concept of security perception is evident in various research studies and models, including the widely employed Technology Acceptance Model (TAM). TAM focuses on the determinants that play a role in the adoption and use of technologies (Rani, 2021).

2.2 Financial Knowledge

Financial literacy plays a crucial role in an individual's financial wellness and can be shaped by various elements such as demographic characteristics, educational background, income level, and geographic location (Nguyen, 2022). Financial knowledge can be defined as the extent of the level of understanding and awareness that an individual has regarding financial concepts, principles, and practices (Adiputra et al., 2021). According to Putra, C. I. W., & Kurniawan, D. (2022) financial knowledge includes the ability to be able to understand and apply financial knowledge to the decision-making process in personal finance, for example budgeting, saving, investing and managing debt. Financial knowledge is also related to financial behavior that is able to be responsible and protect against financial fraud. An individual who has a good financial understanding tends to be more conscientious and less likely to be trapped in scam practices (Panos & Wilson, 2020).

2.3 Perceived Ease of Use

Tahar et al. (2020) explain that the foundational concept of ease of use is rooted in the Technology Acceptance Model (TAM), which was originally introduced by Davis in 188. According to TAM, perceived ease of use essentially pertains to the degree to which users perceive a system as simple to grasp and convenient to operate. Additionally, ease of use can be reflected in the level of system usage and the interactions between users and the system (Ramli & Rahmawati, 2020). Given the multitude of fintech service providers accessible, prospective users typically favor choices that offer simplicity in usage and demand minimal physical or cognitive exertion (Primanda et al., 2020). Ease is characterized as the absence of challenges or the state of being without complications. Consequently, one can deduce that perceived ease of use signifies a scenario in which an individual places confidence in the technology system they are using and it necessitates no specialized skills for operation (Usman et al., 2020). Based on Wilson et al. (2021) the perceived ease of use may be referred to as the perception of consumers or the public towards the technology or system used by a company, this perception comes from people's beliefs and opinions about whether it will spend a lot of time, money or effort to use the new technology or system.
2.4 User Experience

User experience (UX) is characterized as the holistic encounter that connects the emotions, cognitions, interpretations, and responses encountered by the user with their conception of the function in the product or service (Sharma & Tiwari, 2021). Based on this understanding, user experience can be considered as a holistic concept that includes all types of users' real reactions or even their assumptions about a product that are formed before, during, and after use (Hinderks et al., 2022). According to Hâkkinen, V. (2022), user experience is a new concept that is defined as the comprehensive experience of users when dealing with a system. On the other hand, in accordance with ISO 9241-210 (2010) description, User Experience (UX) signifies the user's emotional and behavioral responses during their interaction with a system, product, or service. User experience evaluates the amount of satisfaction and comfort a person has with a product, system, and service (Samara & Susanti, 2023).

2.5 Trust

Trust is the result of a belief that the person involved will be responsible (Qomariah & Wibowo, 2019). In the realm of marketing, trust is defined as the belief that a product or service provider can be relied upon to meet the enduring requirements of the consumer (Wijaya & Dorothy, 2023). As per Gultom et al. (2020), who cites Morman et al. (1993), trust is described as an individual's willingness to rely on other participants in a transaction. There are 3 dimensions of trust according to Lailiya (2020), namely; 1. Honesty, 2. Ability, and 3. Good behavior. According to Umami et al. (2019), trust is frequently linked to object-attribute, or consumer confidence on the likelihood of a correlation between an item and its pertinent properties.

3. Material and Method

3.1 Design Study

This study uses quantitative methods, which is a scientific approach that uses quantitative procedures or techniques systematically (Karo-karo, 2022). Quantitative methods are defined as a fundamental method for studying certain populations or samples, research tools are also used for data collection, data analysis is statistical / quantitative, the aim is to test predetermined hypotheses (Hutasuhut, 2023). Descriptive analysis was used in this study to examine the data and provide an interpretation of the information gathered (Elsa, 2019).

Because some samples did not meet the research objectives, this study used the purposive sampling approach to choose samples by establishing requirements that the study's sample had to meet. Respondents who have used or are now utilizing fintech services in Indonesia meet the desired respondent criteria. Twenty-two of the 122 respondents that made up the study's sample did not fit the study's requirements.

This research utilizes data from a combination of primary and secondary sources. By giving out questionnaires to over 100 responders, primary data was collected. On the other hand, the author gathers secondary data from publicly accessible sources including books, websites, scientific journals, and other trustworthy sources pertinent to the study.
3.2 Data Analysis

Data analysis was conducted using SmartPLS version 4.0, which is a powerful tool for structural equation analysis. Structural equation analysis is employed to investigate the relationships between the research variables, including security perception, knowledge, ease of use, and user experience, and the dependent variable, which is user trust in adopting Fintech. This study uses PLS-SEM Algorithm calculation and bootstrapping. The hypotheses in this study are:

H1 : Security perception on perceived ease of use
H2 : Security perception on trust
H3 : Knowledge on user experience
H4 : Knowledge on trust
H5 : Perceived ease of use on trust
H6 : User experience on trust

![Research Model Diagram]

Figure 1. Research Model

4. Result

To assess reliability, two criteria are employed: composite reliability and Cronbach's alpha. Chua, Y.P. (2022), following the guidelines of Hair et al. (2022), suggests that for a measurement to be considered reliable, both Cronbach's alpha and composite reliability should exceed 0.70. In addition, the validity can be evaluated by the average variance extracted (AVE), which should surpass the threshold of 0.50, as indicated by Elsa (2019).

<table>
<thead>
<tr>
<th>Table 1. Construct Reability and Validity</th>
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<tbody>
<tr>
<td>Cronbach's alpha</td>
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<tr>
<td>------------------</td>
</tr>
<tr>
<td>X1</td>
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<td>X2</td>
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According to the data presented in Table 1, all the research variables exhibit values exceeding 0.70, indicating the indicators utilized for these research variables are trustworthy and dependable. Furthermore, to assess validity, it's essential that the AVE values exceed 0.50. As demonstrated in Table 1, the AVE values for each variable surpass 0.50, confirming the validity of the indicators and variables employed in the study.

For assessing the relationship between a construct and other constructs, it's essential to conduct a discriminant correlation test. This test becomes applicable when the square root of the AVE for a particular latent variable exceeds its correlation with other latent variables. In this study, the discriminant validity test is executed following the Fornell-Lacker standard.

Table 2. Fornell-Larcker Criterion

<table>
<thead>
<tr>
<th></th>
<th>SP</th>
<th>FK</th>
<th>PEOU</th>
<th>UX</th>
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<tbody>
<tr>
<td>SP</td>
<td>0.812</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FK</td>
<td>0.503</td>
<td>0.793</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEOU</td>
<td>0.687</td>
<td>0.611</td>
<td>0.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UX</td>
<td>0.602</td>
<td>0.614</td>
<td>0.741</td>
<td>0.743</td>
<td></td>
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<tr>
<td>T</td>
<td>0.616</td>
<td>0.564</td>
<td>0.690</td>
<td>0.773</td>
<td>0.783</td>
</tr>
</tbody>
</table>

Table 2 indicates that all variables satisfy one of the validity criteria, which is having an AVE value exceeding 0.50. Nevertheless, in the case of the user experience variable, the square root value of this variable is less than the correlation, suggesting that this particular variable does not meet the required criteria.

The structural model test evaluates the correlation between constructs, significance value, and R-square of the research model. To understand the extent to which a particular independent variable affects the latent variable, we can refer to the R-square values presented in Table 3 below:

Table 3. R Square

<table>
<thead>
<tr>
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<th>R Square</th>
<th>R Square Adjusted</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>PEOU</td>
<td>0.472</td>
<td>0.466</td>
<td>Moderate</td>
</tr>
<tr>
<td>UX</td>
<td>0.376</td>
<td>0.370</td>
<td>Moderate</td>
</tr>
<tr>
<td>PEOU</td>
<td>0.646</td>
<td>0.631</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
As shown in Table 3, it becomes evident that the perceived ease of use variable has a value of 0.472, indicating that 47.2% of this variable is affected by security perceptions. Nevertheless, there are other external factors impacting this variable. In the case of the user experience variable, it exhibits a value of 0.376, equivalent to 37.6%, being influenced by the user’s financial knowledge, while other variables beyond the scope of this study also have an impact. For the trust variable, the R-square value is 0.646, implying that 64.6% of this variable is shaped by perceived ease of use and user experience, whereas other variables beyond the scope of this study play a role in the remaining percentage.

To ascertain the acceptance of a hypothesis, it is essential to conduct a bootstrapping test. This test involves an assessment of the T-statistic value and P-values associated with the path coefficients. When the T-statistic value of a hypothesis exceeds 1.96 and the P-value falls below 0.05, it is deemed statistically significant. Conversely, if these criteria are not met, the hypothesis is considered to be statistically insignificant (Hair et al., 2021).

<table>
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<th>Table 4. Path Coefficient</th>
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<tr>
<td>Persepsi Keamanan -&gt; Kemudahan Penggunaan</td>
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<td>Persepsi Keamanan -&gt; Kepercayaan</td>
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<td>Pengetahuan -&gt; Pengalaman Pengguna</td>
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<td>Pengetahuan -&gt; Kepercayaan</td>
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<tr>
<td>Kemudahan Penggunaan -&gt; Kepercayaan</td>
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<tr>
<td>Pengalaman Pengguna -&gt; Kepercayaan</td>
</tr>
</tbody>
</table>

The first hypothesis finding in Table 4 shows that there is a significant and positive effect of security perception on ease of use. This can be seen from the T-statistic value of 11.756 which exceeds the threshold of 1.96, and the P-value of 0.00 which is below 0.05. The original sample value of 0.687 confirms the positively oriented relationship between security perception and ease of use. Hence, the first hypothesis is accepted.
The outcomes of the second hypothesis, specifically the influence of security perception on trust, reveal non-significant findings. This is indicated by the T-statistic value of 1.716, which falls short of the 1.96 threshold, and the P-value of 0.086, exceeding the 0.05 significance level. Consequently, any alterations in the security perception variable score, whether positive or negative, are unlikely to have an impact on trust. While the original sample value of 0.168 does depict a positive association between security perception and trust, the second hypothesis is refuted and not substantiated.

The findings from the third hypothesis, which examines the impact of knowledge on user experience, indicate a substantial and positive relationship. This is evident from the T-statistic value of 7.809, surpassing the 1.96 threshold, and the P-value of 0.00, which is less than the 0.05 significance level. The original sample value of 0.614 signifies a favorable correlation between knowledge and user experience. Consequently, the third hypothesis is accepted.

The results from the fourth hypothesis, which explores the influence of knowledge on trust, demonstrate a lack of a significant and positive relationship. This is evident from the T-statistic value of 0.977, falling below the 1.96 threshold, and the P-value of 0.548, exceeding the 0.05 significance level. In other words, variations in the knowledge variable scores do not have a significant impact on trust. Although the original sample value of 0.071 indicates a favorable direction in the relationship between knowledge and trust, the fourth hypothesis is thus rejected.

The findings from the fifth hypothesis, which investigates the impact of ease of use on trust, indicate a lack of a significant positive relationship. This is evident from the T-statistic value of 0.601, falling short of the 1.96 threshold, and the P-value of 0.329, exceeding the 0.05 significance level. In essence, variations in the ease of use’s variable scores do not significantly influence trust. While the original sample value of 0.145 shows a positive direction in the relationship between ease of use and trust, the fifth hypothesis is rejected.

The findings from the sixth hypothesis, which explores the influence of user experience on trust, indicate a significant positive relationship. This is evident from the T-statistic value of 3.549, surpassing the 1.96 threshold, and the P-value of 0.00, falling below the 0.05 significance level. In essence, variations in user experience variable scores have a significant impact on trust. The original sample value of 0.520 demonstrates a positive direction in the relationship between user experience and trust, and as such, the sixth hypothesis is supported and accepted.

To investigate the mediation effect, which explores the relationship between the independent and dependent variables through an intermediary variable, the analysis employs the Variance Accounted For (VAF). VAF is calculated using the formula for indirect effect divided by total effect, where the total effect comprises both the direct and indirect effects. Consequently, VAF quantifies the extent to which the mediating variable can mitigate the previously significant direct effects within the model without mediation. The acceptance of the hypothesis hinges on whether the T-statistic value exceeds 1.960 or the P-value falls below 0.05 (Hair et al., 2021). Table 5 presents the relationship between the independent and dependent variables in this study through the mediating variable.

**Table 5. Specific Indirect Effect**

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Referring to Table 5, the initial indirect effect, which is the influence of knowledge on user experience mediated by trust, exhibits a significant and positive impact. This is evident from the T-statistic value of 2.958, exceeding the threshold of 1.96, and a P-value of 0.003, below the significance level of 0.05. The original sample value of 0.319 demonstrates the favorable direction of the connection between knowledge and user experience through trust. Consequently, the first hypothesis is accepted.

As for the second hypothesis, which concerns the impact of perceived security on perceived ease of use through trust, it does not yield a significant positive effect in the anticipated direction. The T-statistic value of 0.945 is below the threshold of 1.96, and the P-value stands at 0.344, exceeding the 0.05 significance level. Nevertheless, the original sample value of 0.100 illustrates the positive direction of the relationship between perceived security and perceived ease of use through trust. Therefore, the second hypothesis is not accepted.

5. Discussion

In this study, there are 6 hypotheses that will be discussed one by one using the data that has been processed above.

H1: Relationship between security perception and ease of use

Analyzing the study's outcomes demonstrates a notable positive influence of the security perception variable on the perceived ease of use variable. This conclusion is substantiated by the path coefficient findings, revealing a T-statistic value of 11.756, surpassing the critical threshold of 1.96, and a P-value of 0.00, which is less than the 0.05 significance level. The original sample value of 0.687 signifies the favorable direction of the relationship between security perception and ease of use. Therefore, if fintech users in Indonesia experience improved security perceptions, it will significantly enhance the ease of using fintech services.

H2: Relationship between perceived security and trust

Following subsequent testing, it becomes evident that security perceptions exhibit no statistically significant positive influence on trust. This observation is grounded in the path coefficient findings, which indicate a T-statistic value of 1.716, falling short of the critical threshold of 1.96, and a P-value of 0.086, exceeding the 0.05 significance level. This suggests that fluctuations in the perceived security variable score are unlikely to affect trust. The original sample value of 0.168 highlights the existence of a positive correlation between security
perception and trust. In essence, if users' security perceptions are on the rise, it will have only a marginal impact on consumer trust.

**H3: Relationship between knowledge and user experience**

Following subsequent testing, it is evident that knowledge exerts a statistically significant positive influence on user experience. This is reflected in the path coefficient findings, revealing a T-statistic value of 7.809, surpassing the threshold of 1.96, and a P-value of 0.00, falling below the 0.05 significance level. The original sample value of 0.614 portrays the positive orientation of the connection between knowledge and user experience. Consequently, an enhancement in a user's financial knowledge will lead to a significantly improved user experience.

**H4: Relationship between knowledge and trust**

Subsequent testing reveals that knowledge does not exert a statistically significant positive effect on trust. This is apparent from the path coefficient results, which exhibit a T-statistic value of 0.977, falling below the threshold of 1.96, and a P-value of 0.548, exceeding the 0.05 significance level. The original sample value of 0.071 demonstrates the positive orientation of the connection between knowledge and trust. Thus, an improvement in the financial knowledge of fintech users will influence user trust, albeit not significantly.

**H5: Relationship between ease of use and trust**

Based on the subsequent analysis, it was determined that ease of use does not have a statistically significant positive effect on trust. The path coefficient results reveal a T-statistic value of 0.601, which falls below the 1.96 threshold, and a P-value of 0.329, exceeding the 0.05 level of significance. This suggests that fluctuations in the ease of use’s variable score will not substantially influence trust. The original sample value of 0.145 illustrates the positive relationship between ease of use and trust. Consequently, if the ease of using fintech services improves, it will have an impact on user trust, though not significantly.

**H6: Relationship between user experience and trust**

As per the subsequent analysis, it was ascertained that user experience has a substantial and positive impact on trust. This conclusion is supported by the path coefficient findings, which present a T-statistic value of 3.549, exceeding the 1.96 threshold, and a P-value of 0.00, falling below the 0.05 level of significance. The original sample value of 0.520 demonstrates the favorable connection between user experience and trust. Consequently, if users' financial experiences improve, their trust will also experience a significant enhancement.

**H7: Relationship of perceived security to ease of use with trust as an intervening variable**

Based on the tests that have been carried out, it is found that perceived security does not have a significant positive effect on ease of use. This can be seen in the specific indirect effect results which show a T statistic value of 0.945 < 1.96 and a P Value of 0.344> 0.05. The original sample value of 0.100 illustrates the positive direction of the relationship between user experience and trust. So it can be said that perceived security does not have a significant effect on user convenience with trust as an intervening variable.
H8: Relationship of knowledge to user experience with trust as an intervening variable
Based on the tests that have been conducted, it shows that knowledge has a significant positive effect on user experience. This can be seen in the specific indirect effect results which show a T statistic value of 2.958 > 1.96 and a P Value of 0.003 < 0.05. The original sample value of 0.319 illustrates the positive direction of the relationship between knowledge and user experience. So it can be said that knowledge has a significant effect on user experience with trust as an intervening variable.

6. Conclusion, Implication, and Recommendation
The research outcomes indicate that security perception exerts a favorable and statistically significant influence on ease of use. Furthermore, knowledge positively and significantly affects user experience, while user experience significantly influences user trust in Indonesian fintech services. However, it was observed that security perception and knowledge do not significantly impact trust. Consequently, the implications derived from this study emphasize the need for Fintech companies in Indonesia to recognize the significance of cultivating positive security perceptions among their user base. The cultivation of robust security perceptions can enhance ease of use and user experience, subsequently leading to heightened user trust in Fintech services.

In addition, increased user knowledge of Fintech can also have a positive impact on user experience and trust. Fintech companies can better provide education to their users about the products and services they offer. By having a better understanding, users will be more confident in using fintech services. Therefore, the authors recommend fintech service providers to consider the influential factors in order to increase consumer trust.

7. References


