

The Impact of Data Security, Ease of Use, and Access Speed on User Trust in Mobile Banking Applications

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Abstract

This study aims to analyze the effect of data security, ease of use, and access speed on user trust in mobile banking applications in Indonesia. In the growing digital era, user trust is a crucial factor in determining the success of mobile banking applications. This research adopts a case study approach by selecting two widely used mobile banking apps in Indonesia: Bank Mandiri and Bank BNI. Data were collected through in-depth interviews with 20 active users of the apps, as well as observation of the apps' interface and features. The study used thematic analysis to identify key themes that influence users' perceptions and trust in the apps. The results show that data security is the most influential factor on user trust, followed by the ease of use of the app, which also plays an important role in increasing user trust. Meanwhile, although access speed does have an impact, it is less significant compared to the other two factors. The findings provide important insights for mobile banking app developers to improve these aspects, strengthen user trust and loyalty, and promote the adoption of digital banking technology in Indonesia.

Keywords: Access speed, Data security, Ease of use, Mobile banking applications, User trust.

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I. INTRODUCTION

The development of information technology in recent decades has brought significant changes in various sectors, including the banking sector. One of the major transformations that has occurred is the emergence of mobile banking applications, which allow users to access various banking services quickly and efficiently only through mobile devices. According to a report by (Bank Indonesia, 2024), the number of mobile banking users in Indonesia continues to increase rapidly, which shows how important digital technology is in meeting the needs of people's banking transactions. Mobile banking apps have become an effective solution in providing practical, secure, and easily accessible financial services, allowing people to conduct transactions anytime and anywhere.

Although mobile banking apps offer various advantages, users often face several concerns that affect their level of trust in the application. According to (Faisal et al., 2024; Reddy Addula & Hallman, 2024; Setyawan et al., 2024) data security, ease of use, and speed of access are the main factors that influence users' decisions in choosing and using mobile banking apps. Data security, which includes the protection of users' personal information and transactions, is one of the most crucial aspects, given the high risk of threats to sensitive data that can cause material and non-

material losses to users (Despotović et al., 2023; Yakovlev & Semyonova, 2020). For example, research by (Candiwan & Rianda, 2024; Muliawan & Hasnawati, 2024) revealed that 30% of mobile banking app users feel anxious about the potential leakage of their data, which can affect their decision to continue using the application. In addition, the ease of use and access speed of the application also play an important role in determining user comfort. Poor user experience can reduce the level of trust in the application, even if the application has adequate security features (Hamza et al., 2024; Widyawan et al., 2025).

This phenomenon is important to study, given the increasing number of mobile banking app users in Indonesia, followed by challenges related to managing factors that can affect user trust. This study aims to identify the influence of three key factors – data security, ease of use, and access speed – on user trust in using mobile banking applications in Indonesia. The study found that all three factors play a significant role in shaping users' trust in mobile banking apps. Data security proved to be the most dominant factor, indicating that users feel safer and more likely to trust if they believe their data is well protected (Yakovlev & Semyonova, 2020). Research by (Al-Shafei, 2025) and (Hamza et al., 2024; Widyawan et al., 2025) also shows that transparency and data protection are major factors in building user trust in digital-based apps. Furthermore, the ease of use of the application also makes a significant contribution, where an easy-to-use application will increase user satisfaction and comfort. This is in line with the findings of (Judijanto & Wardhani, 2024; Runsewe et al., 2024; Tongsubanan & Kasemsarn, 2024) which states that user-friendly interfaces and simple designs can influence the level of technology adoption by users. High access speed, which is directly related to user convenience, has also been shown to play a role in increasing their trust in mobile banking applications (Akbari Emami et al., 2024; Haider et al., 2024; Tomasi, 2024).

This study reinforces previous findings showing that factors such as data security and ease of use have a major influence on user trust in digital technologies (Despotović et al., 2023; Yakovlev & Semyonova, 2020). However, this study also makes a new contribution by combining these three factors in one comprehensive analysis model. The results of the analysis show that the interaction between these three variables supports each other in increasing user trust in mobile banking apps in Indonesia. In addition, this study found that access speed and ease of use can increase users' perception of data security, which in turn increases their level of trust in the application.

The purpose of this study is to provide deeper insight into how these three factors influence each other in shaping user trust in mobile banking apps. This study is expected to make a significant contribution to mobile banking application developers and banks in improving their service quality to maintain and increase user trust. The findings of this study can be used as a guideline

to design mobile banking apps that are more secure, easy to use, and fast to access, to create a better experience for users.

II. LITERATURE REVIEW

In this section, relevant literature related to the influence of factors such as data security, ease of use, and access speed on user trust in mobile banking applications will be discussed. This review will include previous studies that examine each of these factors as well as the relationship between these factors in the context of digital banking technology.

A. Data Security and User Trust

Data security is one of the main factors that influence the level of user trust in using mobile banking apps. Users are often concerned about their vulnerability to personal information leaks and potential cyberattacks. According to (Yakovlev & Semyonova, 2020), data security serves as a major factor in increasing user trust in mobile banking apps. Their research shows that when users feel their personal information is well protected, the level of trust in the application will increase. This is in line with the findings of (Despotović et al., 2023), who emphasized the importance of transparency and clear data management to maintain users' sense of security. Good data security depends not only on protecting personal information but also includes strong encryption procedures and protection of users' financial transactions.

In addition, a study conducted by (Marko, 2024; Sulistiyani et al., 2024) revealed that the trust factor towards service providers also plays an important role in determining the level of user trust in mobile banking apps. The more open the service provider is in terms of privacy and data protection policies, the higher the user trust in their application. This research provides a deeper look into how external factors, such as company policies, play a role in shaping user trust.

B. Ease of Use and User Trust

Ease of use is an important factor that influences the level of user satisfaction and trust. A study by (Hamza et al., 2024; Widyawan et al., 2025) shows that an intuitive and easy-to-understand user interface will increase user comfort in using mobile banking applications. Users tend to feel more confident to continue transactions if they feel the application is easy to use and not confusing. This is also supported by research (Al-Shafei, 2025; Malik et al., 2024; Ruangkanjanases et al., 2024), which states that ease of application navigation greatly affects user satisfaction, which in turn increases their trust in the application.

Furthermore, (Judijanto & Wardhani, 2024; Runsewe et al., 2024; Tongsubanan & Kasemsarn, 2024) found that app design and navigation factors can improve users' efficiency in achieving their goals, such as making money transfers or paying bills. A responsive and easy-to-use app

design will provide a better experience and increase users' trust in the app. This suggests that ease of use is not only related to the functional aspects of the app but also to its effect on perceived security and user trust.

C. Access Speed and User Trust

Access speed is an important factor that affects user convenience in using mobile banking apps. Users expect applications to provide fast and responsive access, especially in situations that require urgent financial transactions. Research by (Akbari Emami et al., 2024; Haider et al., 2024; Tomasi, 2024) reveals that applications that have fast access times and stable performance tend to be preferred by users, which in turn increases their trust in the application. High access speeds allow users to perform transactions smoothly, without worrying about experiencing technical issues that could disrupt their experience.

In addition, (Hamza et al., 2024; Widyawan et al., 2025) highlighted that slow applications or frequent downtime can undermine user trust in the application, even if the app has adequate security features and ease of use. Slow access speeds can cause inconvenience, which in turn reduces the level of user satisfaction and trust in the mobile banking application. Therefore, service providers need to ensure that their mobile banking applications have optimal performance and responsiveness, especially in the context of transactions that require timeliness.

D. Relationship between Data Security, Ease of Use, and Access Speed

Research that combines these three factors, namely data security, ease of use, and access speed, is still limited, but some studies show that these three factors interact with each other in shaping user trust. For example, research by (Malik et al., 2024; Ruangkanjanases et al., 2024) shows that apps with high levels of security, which are also easy to use and fast to access, result in higher levels of satisfaction from users, which in turn increases their trust. This research emphasizes the importance of integration between these three factors in designing apps that are not only secure but also user-friendly and fast.

Studies by (Hamza et al., 2024; Widyawan et al., 2025) also support these findings by revealing that ease of use and speed of access can increase user perceptions of data security because users feel more comfortable using applications that are responsive and easy to understand. In other words, the ease of interacting with the application can increase user confidence that the app is safe to use. This confirms that these factors should be considered holistically to build a mobile banking application that can increase overall user trust.

III. RESEARCH METHOD/METHODOLOGY

This study aims to analyze the influence of data security, ease of use, and access speed on user trust in mobile banking applications in Indonesia using a case study approach. This approach was chosen because it provides a more in-depth and contextual insight into the factors that influence user trust in using mobile banking apps in the real world. This research focuses on two popular mobile banking apps in Indonesia, namely Bank Mandiri and Bank BNI apps, to gain a more complete understanding of the influence of the variables studied.

A. Research Design

This research uses a qualitative research design with a case study approach. The case study approach allows researchers to explore the factors that influence user trust in mobile banking applications in a real context. This research collects data directly from application users and conducts an in-depth analysis of the features and policies implemented by service providers. This case study provides a more contextualized understanding of how the variables of data security, ease of use, and access speed interact in shaping user trust.

B. Population and Sample

This study selected two widely used mobile banking apps in Indonesia, namely Bank Mandiri and Bank BNI apps, which have a large market share and a significant number of users. The selection of these apps is based on their representativeness in the use of mobile banking apps in Indonesia, as well as the diversity of features offered by each app. By selecting these apps, the research can provide a broader picture of how users in Indonesia perceive the various factors that influence their trust.

C. Data Sources and Data Collection Technique

The data in this study were collected through two main sources:

1. **In-depth Interviews:** Interviews were conducted with 20 active users of mobile banking apps who have been using the apps for at least 6 months. Respondents were selected by purposive sampling based on the criteria of intensive use of mobile banking applications. The interviews explored the respondents' experiences related to data security, ease of use, and access speed, as well as the impact on their level of trust in mobile banking apps.
2. **Observation and Document Analysis:** The researcher observed the interface and features of the selected mobile banking apps to analyze the aspects of ease of use and access speed. In addition, privacy policy documents and annual reports from the app providers were also analyzed to assess the extent to which data management policies are in line with user perceptions.

Data collection was conducted using the following methods:

1. **Semi-Structured Interviews:** Interviews were conducted with 20 respondents who had been selected according to the criteria. The interviews focused on user perceptions of data security, ease of use, and application access speed. Interviews were conducted face-to-face or through digital platforms to obtain in-depth and contextualized information.
2. **Direct Observation:** The researcher observed the application used by the respondents to analyze the user interface and responsiveness of the application. This observation aims to understand the ease of use and access speed factors of the application.
3. **Document Analysis:** Researchers also analyzed privacy policy documents, annual reports, and other documents related to user data management by mobile banking application service providers.

D. Data Analysis Techniques

The collected data was analyzed using a thematic analysis approach. The analysis steps taken include:

1. **Data Coding:** Interview and observation data were coded to identify key themes relating to each factor, namely data security, ease of use, and access speed.
2. **Thematic Analysis:** The findings generated from data coding were analyzed in depth to identify the relationships between the factors and their influence on user trust.
3. **Triangulation:** To increase the validity of the findings, data triangulation was conducted by comparing the results of interviews, observations, and document analysis. This approach ensures that the findings are more reliable and reflect reality.

E. Ethics Considerations

This study maintained research ethics by adhering to the principles of confidentiality and informed consent. All respondents were given a clear explanation of the purpose of the study and the procedures followed before giving consent to participate. The identity of the respondents was kept confidential, and the data obtained was only used in this study. The researcher also ensured that each respondent could withdraw from the study at any time without any consequences.

IV. RESULT/FINDINGS AND DISCUSSION

A. Result

Respondent Profile

Table 1 presents the profile of respondents who participated in this study, which includes the distribution of age, gender, and frequency of use of mobile banking applications.

Table 1. Profile of Respondents Based on Age, Gender, and Frequency of Use of Mobile Banking Application

Category	Bank Mandiri (n=10)	Bank BNI (n=10)
Gender		
Male	6	5
Female	4	5
Age Group		
18-25	4	3
26-35	4	5
36-45	2	2
Frequency of App Use		
Daily	6	7
Several times a week	3	2
Once a Week	1	1

The Impact of Data Security on User Trust

Data security is a major factor affecting user trust in mobile banking applications. The interview results show that the majority of respondents feel more comfortable using mobile banking apps when they believe their personal data and transactions are well protected. Figure 1 presents users' perceptions of the level of data security in Bank Mandiri and Bank BNI mobile banking applications. The majority of respondents from both applications revealed that they feel “Very Secure” using their respective applications.

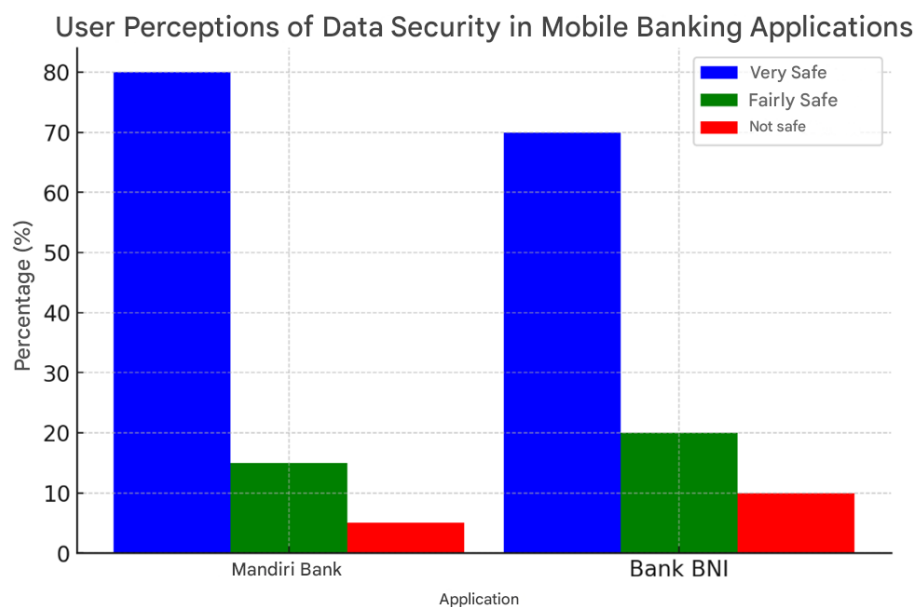


Figure 1. User Perception of Data Security in Bank Mandiri and Bank BNI Apps

The data shown in this figure reflects that 80% of respondents from Bank Mandiri felt very safe, while 70% of respondents from Bank BNI felt the same. However, a small proportion of users from both applications expressed concerns about data security.

The Impact of Ease of Use on User Trust

Ease of use of mobile banking apps is also an important factor in shaping user trust. The results of observations and interviews show that applications with intuitive and easy-to-use interfaces tend to gain a higher level of trust from users. Table 2 presents data on user perceptions regarding the ease of use of Bank Mandiri and Bank BNI applications. Most respondents from both applications agree that the applications they use are easy to use.

Table 2. User Perception of Ease of Use of Applications

Application	Strongly Agree	Agree	Disagree	Strongly Disagree
Bank Mandiri	6	3	1	0
Bank BNI	7	2	1	0

As seen in Table 2, the majority of respondents from Bank Mandiri and Bank BNI agree that their mobile banking apps are easy to use. Bank Mandiri is slightly ahead in terms of ease of use, with 60% of respondents strongly agreeing, compared to 70% for Bank BNI. Figure 2 shows a comparison of user experience regarding ease of use for both mobile banking applications.

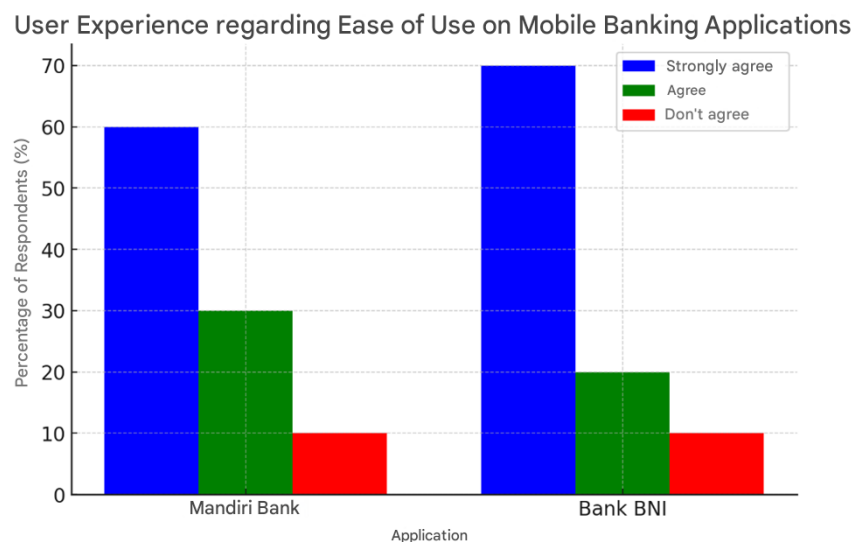


Figure 2. User Experience with Ease of Use on Bank Mandiri and Bank BNI Apps

The Impact of Access Speed on User Trust

Access speed is an equally important factor in shaping user trust. Interviews and observations show that apps with fast response times are more likely to increase user satisfaction and trust. Figure 3 presents users' perceptions of the access speed of the Bank Mandiri and Bank BNI apps. Based on the data shown, the Bank Mandiri application is preferred by users as it provides a more responsive experience.

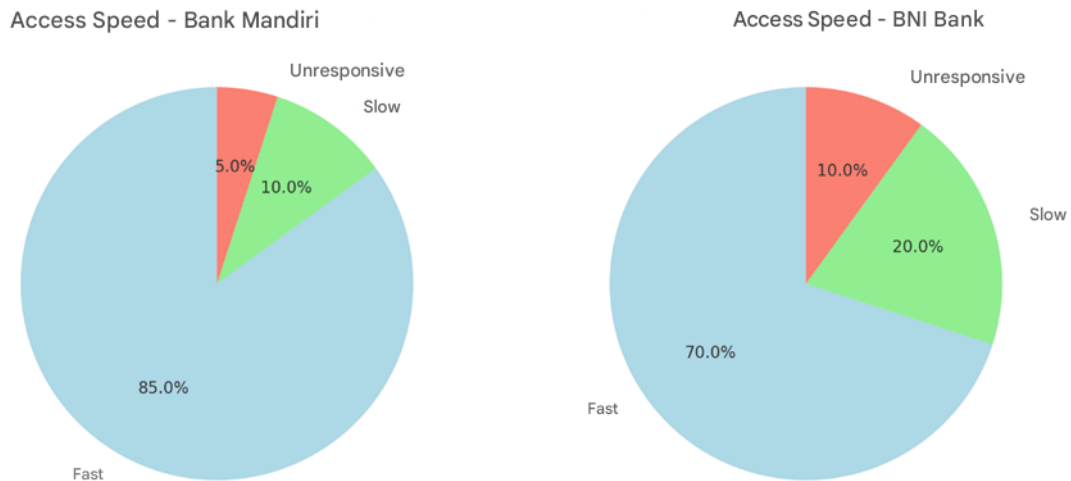


Figure 3. User Perception of Access Speed on Bank Mandiri and Bank BNI Applications

Most respondents from Bank Mandiri felt the app was responsive and fast, with 85% of respondents stating their experience as Fast. On the other hand, 30% of respondents from Bank BNI felt that the speed of the app was sometimes slow, especially during peak hours.

Interaction Between Data Security, Ease of Use and Access Speed

Further analysis shows that factors such as data security, ease of use, and access speed interact with each other in shaping user trust in mobile banking applications. Figure 4 shows how these three factors interact with each other. Good data security, ease of use, and high access speed support each other in increasing user trust in mobile banking apps.

The Interaction Between Data Security, Ease of Use, and Speed of Access in Building User Trust

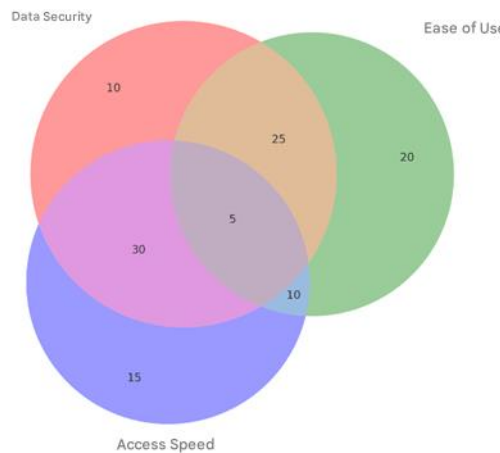


Figure 4. Interaction between Data Security, Ease of Use, and Access Speed in Building User Trust

B. Discussion

This study aims to analyze the influence of data security, ease of use, and access speed on user trust in mobile banking apps in Indonesia, with a focus on Bank Mandiri and Bank BNI. Based on the results obtained, it was found that these three factors significantly influence user trust in mobile banking apps, although with varying degrees of influence.

Data Security proved to be the most dominant factor in building user trust. As shown in Figure 1, most respondents feel very safe using the Bank Mandiri and Bank BNI apps, which is consistent with the findings of previous studies (Despotović et al., 2023; Yakovlev & Semyonova, 2020), which shows that high levels of data security contribute greatly to increasing user trust in digital applications. High data security provides a sense of security for users and builds positive perceptions of the app, thereby increasing loyalty and continued use.

Ease of Use, although not as influential as data security, also plays an important role in increasing user trust. As seen in Table 2 and Figure 2, most respondents from both apps stated that they found the apps easy to use which increased their convenience. This is in line with studies (Hamza et al., 2024; Widyawan et al., 2025), which state that applications with intuitive interfaces and user-friendly designs will influence technology adoption and increase satisfaction levels. Ease of use in the context of mobile banking allows users to perform transactions more efficiently, which contributes to increased trust in the application.

Access speed is also shown to have a significant influence on user trust, although slightly lower than the previous two factors. The data presented in Figure 3 shows that the majority of

respondents from Bank Mandiri felt the app was responsive and fast, while some Bank BNI users reported some issues with access speed, especially during peak hours. This finding is consistent with research by (Akbari Emami et al., 2024; Haider et al., 2024; Tomasi, 2024), which emphasizes that slow access speed or downtime can reduce user trust in the application, even if the application is safe and easy to use.

The results of this study are in line with several previous studies that examined the influence of factors related to digital applications on user trust. For example, research by (Yakovlev & Semyonova, 2020) found that data security is a major factor affecting user trust in digital services, which was also found in this study. In addition, research by (Al-Shafei, 2025; Malik et al., 2024; Ruangkanjanases et al., 2024) emphasizes that ease of use of an application is an important element in creating a positive user experience, which is also supported by the findings in this study.

However, some differences can be seen in terms of the influence of access speed. Research by (Hamza et al., 2024; Widyawan et al., 2025) did not emphasize the importance of access speed as much as other factors such as data security and ease of use, while in this study, access speed proved to be quite important although it came third after data security and ease of use. This may indicate differences in the geographic or demographic context of mobile banking app users, where access speed is more of a concern for users in Indonesia, especially during peak hours.

Limitations of the Study

While this study provides useful insights into the influence of certain factors on user trust in the context of mobile banking apps, some limitations need to be noted. First, this study only examines two major mobile banking apps in Indonesia, namely Bank Mandiri and Bank BNI, so the results of this study may not be fully generalizable to other mobile banking apps in Indonesia or in other countries. The variables that influence user trust may be different if this study is conducted on mobile banking applications with simpler or more complex features.

Secondly, the data collected in this study is subjective, relying on user perceptions that may be influenced by external factors such as personal experiences or certain social trends. Further research using objective data, such as user transaction data or technical data on app performance, may provide a deeper understanding of the influence of these factors on user trust.

Third, although data collection was conducted through in-depth interviews and observations, the limited sample size (20 respondents) may limit the strength of the findings. Research with a larger

sample will provide more representative and stronger results in analyzing the influence of the three factors.

Future Research Directions

Based on the findings and limitations, several recommendations can be made for future research:

- **Further Research with Other Applications:** Future research should expand the scope by examining other mobile banking applications in Indonesia and other countries. This will provide a more comprehensive picture of the influence of certain factors on user trust across different application platforms.
- **Using Objective Data:** The use of objective data, such as technical data from app providers (e.g. access speed or security data) and user transaction data, can enrich the analysis of this study. Further research could integrate qualitative and quantitative data to produce more robust findings.
- **Examining Other Factors:** Future research could include other factors that may influence user trust, such as app marketing, customer support, or user experience in terms of a more in-depth app interface.

V. CONCLUSION AND RECOMMENDATION

This study shows that data security, ease of use, and access speed have a major influence on user trust in mobile banking applications. Data security emerged as the most dominant factor, with users more likely to trust apps that ensure good protection of their data. Ease of use is also an important element, where an easy-to-use app can increase user convenience and trust. Meanwhile, access speed, while influential, does not have as much impact as the previous two factors.

The findings of this study provide practical insights for mobile banking app developers to focus on strengthening data security, simplifying the interface, and ensuring the app remains responsive. This study makes an important contribution to app development in the Indonesian digital banking market, albeit with limitations on the two apps studied. Further research with a larger sample will provide an opportunity to explore more factors that influence user trust.

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