The Factors Affecting Digital Bank Services Adoption Using Trust as Mediating Variable

Kantika1,*
Florentina Kurniasari 2,
Mulyono 3
1,2Technology Management Department, Universitas Multimedia Nusantara, Tangerang, Indonesia
3Management Department, Universitas Bina Nusantara, Jakarta, Indonesia

ARTICLE INFO

ISSN: 2723-1097

Keywords:
Digital Bank, Financial Sector, Financial Technology, Digital Transformation

ABSTRACT

The rise of the internet in Indonesia have pushed businesses to speed up the digital transformation of the financial sector, including banking and financial technology. This has led to changes in the structure of the economy and how businesses compete and collaborate. A Digital Bank is one of the business model innovations because it relies on a digital ecosystem. It is important for people to have trust in digital bank services because this digital bank doesn’t have a branch office to provide its services, and there aren’t adequate regulations to protect data or security system. This study aims to determine what factors influence customers’ adoption of a digital bank by analyzing the effects of perceived security, perceived enjoyment, financial literacy, and brand image on the adoption of digital payment services using trust as a mediating variable. This research was conducted using quantitative methods with Digital Bank users as the respondents. The results of the study indicate that perceived security, perceived enjoyment, financial literacy, and brand image have a positive and significant influence on the adoption of digital bank services in Indonesia, where trust variable has the greatest effects on the adoption of Digital Bank services. Therefore, Digital Bank companies need to increase user trust by increasing IT resources, developing attractive and useful digital platforms, and building a good image of the Digital Bank industry as a trusted service.

Introduction

The rise of Internet used has accelerated the digital transformation of banking. It caused people to adapt to digitalization, especially with limitation on physical activity. People are forced to carry out their economic transactions through digital platforms (Setiawan et al., 2021). Banks must accelerate the improvement of their digital services if they do not want to be abandoned by customers (Safari et al., 2020). Customers of financial services in Indonesia are increasingly using the internet and mobile banking. It implies that digital channels will play a greater role in generating loyalty for financial institutions (Windasari et al., 2022). Physical branches have traditionally been the primary channel for customer engagement but there is a significant shift toward online platform for daily transactions (Otoritas Jasa Keuangan).
In line with changes in people's behaviour towards digitalization trends in various aspects, including banking transactions, branchless digital banking services have recently begun to emerge in Indonesia. The demand for digital banks is largely caused by the increasing digital behaviour of people to carry out their daily activities, especially for younger people who are used to doing things online (Windasari et al., 2022). Moreover, the COVID-19 pandemic has caused people to reduce activities outside the home. In addition, the use of contactless payment methods is increasingly in demand by the public to replace the use of physical money (Le, 2021).

The increasing of digital bank industry creates tighter competition. Many Digital Banks have been established as a result of the transformation of business models carried out by conventional banking (Windasari et al., 2022). Based on OJK data in June 2021, there are 7 banks that have officially become Digital Banks, and there are 7 other banks that are set to be legalized as Digital Banks (The Low Down, 2021). From the list, there are 6 Digital Banks that established as a result from the transformation of traditional bank (The Low Down, 2021). Not only incumbent players in the banking world, start-up companies and technology companies have also acquired many small banks to become Digital Banks (Fu & Mishra, 2022). Since the banking business relies on trust, companies need a reputation to build customer trust that they will protect customers' money and personal information (Letamendia & Poher, 2020). Therefore, some Digital Banks have the support of large companies with substantial business experience and ecosystem (Murinde et al., 2022), which results in some advantages such as rich data to drive customer insights and acquisition (Verhoef et al., 2021).

However, along with its development, Digital Banks experience several challenges which will certainly affect the level of adoption and use of Digital Bank services in Indonesia. Since consumer are used to banking in the branches offered by the conventional banking, digital banks may face some resistance to this innovation (Nel & Boshoff, 2021). It is very important for Digital Bank to convince citizens that they will achieve certain benefit and usefulness in their banking activities when using the digital bank services (Windasari et al., 2022). Besides the benefit, new innovation, especially in technology, need to offer the easiness in order to brings great experience, which gives positive view about an innovation (Himel et al., 2021).

The business model of Digital Bank is different from the existing digital banking provide by conventional bank like internet banking or mobile banking. The digital apps provided by conventional bank is just supporting the banking activities, thus they still rely on the physical branch (The Low Down, 2021). In some countries, this digital branchless bank is called Neo Banks. Digital banks redefine the banking sector at once by showing what the possible future of banking could look like (Murinde et al., 2022). Digital Bank's business model is different from digital applications provided by conventional banks (Fu & Mishra, 2022). The primary
difference between Digital Bank and conventional banks is that digital banks have no physical branch locations for operational services. Digital applications provided by conventional banks only support banking activities, so they still rely on physical branch offices (Otoritas Jasa Keuangan, 2021). Meanwhile, digital banks do not have physical branch locations to provide operational services to customers. Access to digital banking services is entirely done by customers themselves through smartphone applications, even from the administration process (Windasari et al., 2022). Digital banks are cutting-edge fintech technology that operates fully paperless, which increase efficiency in time and financial (Windasari et al., 2022).

Furthermore, there are security threat risks since all the transactions are carried out online via the internet (Rouibah et al., 2016). Data from the National Cyber and Crypto Agency shows the high number of cyber-attack cases in 2020 which reached 40 million cases (National Cyber and Crypto Agency, 2020). The next challenge faced by Digital Banks is the level of financial literacy of the Indonesian people which is still relatively low. Whereas, Financial literacy is a factor that affects individuals’ decision to participate to do financial activities and using financial product (Letamendia & Poher, 2020). Based on the National Survey conducted by OJK, the financial literacy index in 2019 was 38.03% (Otoritas Jasa Keuangan, 2022).

There are many researches discussed about the adoption of fintech service. However, there have been limited studies concerned on the adoption of Digital Bank in Indonesia. Therefore, this research intends to investigate some factors that affects to the Digital Bank adoption in Indonesia, that include perceived security, perceived enjoyment, financial literacy, brand image, and customer trust.

**Literature Review**

**Digital Bank**

Digital bank services are electronic services that are created by optimizing customer data to be carried out safely and securely by customers in a fully electronic manner (Otoritas Jasa Keuangan, 2020). In some countries, digital bank is called Neo bank. Digital banks have an advantage over traditional banks because of their new business model, which provides end-to-end entirely digital solutions and/or services that leverage technological capabilities (Windasari et al., 2022). In addition, some digital banks are supported by established companies with substantial business experience and ecosystems, which leads in benefits such as high brand awareness and rich data to boost customer insights and acquisition (Fu & Mishra, 2022).

**Perceived Security**

Perceived Risk can be referred as the consequences that is predicted come during the process of using a specific service, while the psychological perception of serious
consequences occurs (Ye et al., 2020). If expectations are not fulfilled, the consumer could consider risks in the use of technology (Nel & Boshoff, 2021).

Customer perception about the security concerns may negatively impact the usage of products and services, including secure digital services and data privacy protection (Kurniasari, 2021). To deal with the perceived risk from customer, company can manage the customer fear of risk through a comprehensive communication and information literacy regarding the financial technology. Related to the Digital Bank, it is important to ensure the security of financial transaction conduct in the financial apps, as well as triggering contingency plans for use in case of complications (Merhi et al., 2019).

Perceived Enjoyment

Perceived enjoyment in system related to the feature and interface from the system, which including attractiveness, aesthetic, pleasure activities, playfulness and fun. It motivates users to use the innovation which gives them joy to use it (Hussain et al., 2016). Enjoyment and great experience have a huge impact in using technology. When customer feel more comfortable and get fun experience, it would create higher confidence in using new technology (J.W. Moon, 2001).

People's preferences are currently shifting toward an all-digital lifestyle. The public obviously expects supported digital banking services that are effective, efficient, and secure (Otoritas Jasa Keuangan, 2021). Customers will keep using applications that they find interesting and useful (Rouibah et al., 2016). Consumer experiences are critical in the context of digital services. To convince customers, digital banks need to provide unique products features that different from the others (Windasari et al., 2022). Customers will enjoy the efficiency and convenience from the digital technology (Kurniasari, 2021).

Financial Literacy

The term of financial Literacy described as a knowledge, skill, and someone trust that impact to the individual’s attitude and behaviour to enhance decision making process and financial planning in order to achieve prosperity (Otoritas Jasa Keuangan, 2017). Financial literacy is a key factor that affects individuals´ decision to participate to do financial activities in financial market. Those who have a deeper and clearer knowledge of financial instrument are more confident in the financial system and banks (Letamendia & Poher, 2020).

Customer understanding of financial products is required for the development of fintech, especially digital banks (Setiawan et al., 2021). The digital transformation in banking needs to be supported by an understanding of financial products and services which include product features, benefits and risks, rights and obligations related to
financial products and services, as well as skills in using financial products and services (Otoritas Jasa Keuangan, 2021).

**Brand Image**

Brand Image is the perception and feeling consumers have about a brand, which drives customer behaviour (Zhang, 2015) based on personal experience or information obtained from others (Pratama, 2021). To build brand image, company set up marketing strategies to change how people think about and feel about a brand, create an image of the brand in people's minds, and get people to buy the brand. This increased sales, grew the market share, and built brand equity (Zhang, 2015).

Before deciding to use a product or service, the customer first will find out about the brand that can provide the expected service. Customer’s knowledge about the advantages and disadvantages of a financial product will affect his/her decision to use the financial products (Kurniasari et al., 2018). For the financial service industry, brand image is an important factor to get customer trust. Customers tend to choose brands that have a good reputation and well known for their quality of service and products (Hoang et al., 2021). As new players in the financial market, digital banks are attempting to establish a brand image in order to convince customers about their products. Collaboration between traditional banks and digital companies can create chances for digital banks to obtain customers acquisition for the development of digital bank products and services (Otoritas Jasa Keuangan, 2022).

**Trust**

In the term of technology acceptance, trust described as a degree to which a user can rely on the integrity of an application in providing its services (Indrawati & Putri, 2018). Trust is built because the consumer expects the system will act as the needs and wishes of the consumer. When the consumer has trust, they believe that their expectations are fulfilled (Benhardy et al., 2020). As part of financial industries, trust is the most critical factor to encourage costumer in doing financial activities through financial system provided by Digital Bank (Letamendia & Poher, 2020). The financial activities including transaction, savings, and investment decision. The higher level of confidence individual will raise willingness to participate in financial activities using Digital Bank (Kurniasari, 2021).

**Adoption of Digital Bank Services**

Technological capabilities are defined as the knowledge and skills organizations use to continuously collect, adapt, enhance, and create technology in order to reach a sustainable inventive capacity (Banks et al., 2020). Financial technology adoption demands banks to see it as a chance to improve performance and
Digital Bank, like any other digital financial service, need to create customer trust which is the most significant factor influencing customer decision to adopt digital financial services (Kurniasari, 2021). In Indonesia, digital bank companies offer various services to the public. Adoption of Digital Bank measures how customers decide to use Digital Bank services in the future (Kurniasari, 2021).

Research Framework

![Research Framework Diagram](source: Developed by Author)

Method

The research was conducted using quantitative methods, namely by collecting primary data through the distribution of questionnaires to test hypotheses using statistical methods. The initial stage of the research was carried out by conducting a literature review from various sources including the latest data from OJK to identify problems and phenomena that were happening. After identifying the problem, a research model is developed based on related theories and previous studies to generate hypotheses.

The population in this study are Digital Bank users in Indonesia. The sampling method used is non-probability sampling, the sampling technique is purposive sampling. In purposive sampling, the sample is selected based on predetermined criteria. The sample of this research is category of Digital Bank users in Indonesia who are above 17 years old.

The research sample taken amounted to 134. Data collection in this study was carried out by distributing questionnaires to a predetermined sample. The measurement scale used is a Likert scale with five categories, from "strongly agree" to
"strongly disagree. The data from the questionnaire were analyzed using the Structural Equation Modeling method using SmartPLS 3 software. In the Structural Equation Modeling method, there were 2 stages of analysis, namely the outer model and the inner model. The inner model consists of validity and reliability testing, followed by the inner model consisting of calculation (R²), effect size (f²), Predictive Relevance (Q²), path coefficient, and model fit analysis.

Result and Discussion

Coefficient of Determination (R²)

The value of R² for each endogenous latent variable shows the predictive power of the structural model. Based on the Rule of Thumb Theory, R² values of 0.67, 0.33, and 0.19 indicate a strong, moderate, and weak model (Hair et al., 2017).

Table 1. Coefficient of Determination (R²) Value

<table>
<thead>
<tr>
<th>Variable</th>
<th>R-Square</th>
<th>Adjusted R-Square</th>
<th>Model Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0.680</td>
<td>0.671</td>
<td>Strong</td>
</tr>
<tr>
<td>Adoption</td>
<td>0.467</td>
<td>0.459</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

The data processing result, the R² value of Trust is 0.680 which indicates the strong model. This means that Trust was influenced by variations of the Brand Image, Perceived Security, Perceived Enjoyment, and Financial Literacy factors as much as 68%. It means the 32% Trust variable was influenced by other factors besides these variables. While the R² value of Adoption is 0.467 which indicates the moderate model. The Adoption variable can be explained by variations of the Perceived Enjoyment and Trust factors as much as 46.7%. It means 53.3% Adoption variable was influenced by other factors.

Predictive Relevance (Q²)

Table 2. Predictive Relevance (Q²) Value

<table>
<thead>
<tr>
<th>Variable</th>
<th>SSO</th>
<th>SSE</th>
<th>Q² = (1-SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>556</td>
<td>273.429</td>
<td>0.508</td>
</tr>
<tr>
<td>Adoption</td>
<td>417</td>
<td>275.102</td>
<td>0.340</td>
</tr>
</tbody>
</table>

Source: Output from SmartPLS 3, Data Processed by Researcher (2022)
The results of main-test data processing, after the blindfolding process on SmartPLS, obtained the $Q^2$ predictive relevance values for endogenous variables (Trust and Adoption). The result showed that Trust and Adoption has $Q^2$ values > 0, which indicates that the model has predictive relevance. It means that the dependent variables can be predict by its independent variables.

**Hypothesis Testing**

![Figure 2. Result of Path Coefficient](source: Data Processed by Author using SMART-PLS 3 Program)

Hypothesis testing is done by using SmartPLS and the bootstrapping method. Based on the rule of thumb, If the $t$-statistic is more than 1.96 and the $p$ value is less than 0.05, the hypothesis is accepted (Hair et al., 2017).

**Table 3. Result of Hypothesis Testing**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variables</th>
<th>Original Sample (O)</th>
<th>$T$ Statistics</th>
<th>$P$ Values</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>BI -&gt; TR</td>
<td>0.366</td>
<td>4.842</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H2</td>
<td>FL -&gt; TR</td>
<td>0.170</td>
<td>3.169</td>
<td>0.002</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3</td>
<td>PE -&gt; AD</td>
<td>0.292</td>
<td>2.502</td>
<td>0.012</td>
<td>Accepted</td>
</tr>
<tr>
<td>H4</td>
<td>PE -&gt; TR</td>
<td>0.233</td>
<td>3.352</td>
<td>0.001</td>
<td>Accepted</td>
</tr>
<tr>
<td>H5</td>
<td>PS -&gt; TR</td>
<td>0.317</td>
<td>4.363</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H6</td>
<td>TR -&gt; AD</td>
<td>0.474</td>
<td>4.685</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>H7</td>
<td>PE -&gt; TR -&gt; AD</td>
<td>0.111</td>
<td>2.935</td>
<td>0.003</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Output from SmartPLS 3, Data Processed by Researcher (2022)
The result of hypotheses testing could be explained as follows:

H1: Perceived Security has significant and positive effect on Trust in adoption of Digital Bank Services

Customers of Digital Banks' service platforms need to be convinced of the security of transactions through Digital Banks. Low security risk will increase user confidence to adopt digital financial services (Kurniasari, 2021). When users feel safe, it will encourage them to use a system, in this case, digital bank services. In this study, perceived security included a sense of security in transactions and protection of data privacy from hackers. Based on data from respondents, users strongly agree that perceived security is an important factor that affects trust in digital bank services. However, there is one indicator that gets the smallest mean on this variable which is data protection from hackers. This shows that there are still users who are not confident in the digital banks’ ability to protect their data privacy.

In order for people to trust and feel safe using digital banks, digital bank companies must be able to make their digital platforms more secure Companies regularly socialize and educate the public about cyber security, cooperate with the government to improve cyber security. Companies also need to improve management and information technology resources.

H2: Financial Literacy has significant and positive effect on Trust in adoption of Digital Bank Services

This study's findings are supported by prior research conducted by (Letamendia & Poher, 2020), which found that financial literacy has a positive influence on trust in the financial system. People who have a more understanding of financial management tend to have a higher level of trust in the banking system as well as the financial system overall. Customers think about financial services based on how much they know and how much they know about the benefits of financial services (Letamendia & Poher, 2020).

According to the respondents, digital bank users agree that knowledge about financial products and understanding the suitable product for their needs will increase their trust in using Digital Bank services. Digital Bank expected to be the main driver of consumer digital financial literacy. It is important to work together and involve all the related parties, such as governments, academics, researchers, and other stakeholders. Banks need to conduct socialization and education regarding the financial products and services offered including features, benefits and risks, rights and obligations related to financial products and services, as well as competence in using financial products and services.
H3: Brand Image has significant and positive effect on Trust in adoption of Digital Bank Services

The findings of this study were consistent with some number of earlier studies. First, research conducted by (Pratama, 2021) indicates that the public's perception of a company's brand increases a positive and significant impact on their confidence when using financial technology. Digital Banks with a higher reputation will gain more client trust. It is further supported by the findings of (Zatwarnicka-Madura et al., 2016) who observed that brand image had a significant impact on consumer trust. They found that customers were more likely to trust a brand that they perceived to be trustworthy. The reputation of a digital bank as a trustworthy financial institution is a critical component in winning over new customers. The more positive Digital Bank's image in Indonesian society, the greater customer trust in using its digital bank services. A good digital bank's image is one of the important factors for customer trust when choosing digital banking services.

H4: Perceived Enjoyment has significant and positive effect on Trust in adoption of Digital Bank Services

Perceived enjoyment is one of the factors that important for the new system. When clients have a positive experience making their first purchase using digital payment services, they are more likely to adopt the new digital payment methods in the future (Kurniasari, 2021). When customers feel comfortable using it, it will build trust in its use. Having fun may come more from wanting to be creative and try new things with the new system (Rouibah et al., 2016).

Based on the findings of this research, the advice is that the application platform should to produce innovation that focuses on features that are both helpful and user-friendly, while at the same time not sacrificing the application performance. Banks need to strengthen core products that have high consumer engagement, then add other features needed by users, by strengthening research and innovation in digital transformation.

H5: Perceived Enjoyment has significant and positive effect on adoption of Digital Bank Services

Users of Digital Bank may have the impression that they are having a good time and are excited about the new experience they have gained, despite the fact that there is a possibility of suffering loss when doing online transactions with the bank. Digital banks, in general, provide such a variety of features and services for online transactions. Users no longer need to look for ATMs or branch locations to make banking transactions. They may be convinced to use it instead of a traditional bank. It
can be important motivator and experience for adopting a new system can be leisure activities, self-fulfilling experiences, and joy (Rouibah et al., 2016).

H6: Trust has significant and positive effect on adoption of Digital Bank Service

Trust will encourage the desire to use the service (Himel et al., 2021). Customers will prefer official financial services and have been registered with legal financial institutions (Kurniasari, 2021). Because of this, Digital Bank had to be licensed by the government (OJK). In this study, trust means that people believe that digital banks are trustworthy, that they care about their customers, and that they will keep their promises.

Banks that provide digital banking services must demonstrate commitment when dealing with customers. Aside from that, Bank Digital does not have a physical location where customers can interact with them. As a result, Bank Digital should build high-quality customer service so that customers can continue to receive high-quality services, even if they are fully digital. Furthermore, improving products and services quality through the implementation of big data technology to analyze customer data.

H7: Perceived Enjoyment has indirect significant and positive effect on adoption of Digital Bank Service through Trust

This result implies that Perceived Enjoyment has positive and significant effect to the Adoption variable through trust. trust becomes a mediating variable. Therefore, Hypothesis 7 is accepted. This result aligned with previous study from (Rouibah et al., 2016) which showed that Perceived Enjoyment had an effect on Adoption of online payment system. In general, the services provided by Digital Bank in digital applications aim to facilitate daily financial activities, such as transfers, digital wallets, payments, and investment activities such as opening deposits. However, Digital Banks cannot replace the role of Conventional Banks where conventional banks provide broader financial services and products such as providing business loans, home ownership loans, and so on. Looking at the services provided by digital banks and conventional banks, it can be said that digital banks complement the presence of conventional banks by offering services that facilitate individual banking daily activities.

Conclusion

From the results of the research, it was found that from the six hypotheses, all of these hypotheses were accepted, with Trust variable has the most significant effect to Adoption of Digital Bank service. So, it can be concluded that Trust has the greatest significant effect on the adoption of Digital Bank Services. Besides that, perceived
security, financial literacy, and brand image, and perceived enjoyment have significant effect to customer Trust.

This study contributes on the academic field in development of a relationship model between perceived security, perceived enjoyment, financial literacy, brand image, trust and adoption of Digital Bank service. For managerial implication, Digital Bank companies need to strengthen the security system on the digital apps, develop unique feature, and promoting the financial knowledge. Digital Bank service may not replace the role of conventional banking, but these two services complement each other. In general, the services provided by Digital Bank in digital applications aim to facilitate daily financial activities, such as transfers, digital wallets, payments, and investment activities such as opening deposits. However, Digital Banks cannot replace the role of Conventional Banks where conventional banks provide broader services. It can be said that digital banks complement the presence of conventional banks by offering services that facilitate individual banking daily activities.

There are some limitations in this research. Since the R² on the trust variable is 68%, it indicates that 32% of trust factors may still be impacted by others variable. Second, this study focused on the adoption of Digital Bank services in general. And finally, this study was undertaken during the COVID-19 pandemic, which increased the rate of digital technology utilization compared to normal conditions. There are opportunities for future research to analyze others factor that might affect trust in using Digital Bank such as governance support. Second, it is recommended to conduct a study on a particular Digital Bank brand in order to determine the adoption of a certain Digital Bank brand. Also, it’s necessary to do more research on the use of digital banks in normal situations.

Acknowledgment

The Author would like to thank to Universitas Multimedia Nusantara who support the completion of this article.

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https://doi.org/10.1016/j.jfi.2021.100945
