



## Analysis Of Electronic Service Quality, Transaction Security, And Mobile Banking Application Service Quality On The Use Of Digital Banking

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**Abstract:** In the ever-growing digital era, the banking sector has experienced a significant transformation with the introduction of digital banking. Banks around the world, including banks in Indonesia, have invested in infrastructure and technology to provide digital banking services to their customers. In this context, it is important to understand how certain factors may influence the use of digital banking in Indonesia. This research uses a qualitative research design using descriptive research methods, aiming to analyze the influence of quality in electronic services, transaction security, and the quality of mobile banking application services on the use of digital banking. Marketing strategies carried out by digital banking in facing competition using SWOT analysis. Based on the SWOT analysis, digital banking must continue to maintain the best and varied products and take advantage of opportunities in increasingly advanced technology and information.

**Keywords:** Management Information Systems, Electronic Service Quality, Transaction Security, Mobile Banking Application Service Quality, Digital Banking

### INTRODUCTION

Indonesia is one of the countries with the most internet users in Southeast Asia, where the effects of rapid technological developments in this modern era,

create the application of information systems in the business world to keep abreast of developments. Recently, competition in the business world can be marked by the increasing number of companies being founded. The company has a goal, the main goal of a company is how the company can maintain its survival and maintain business continuity so that it can survive in all forms of competition, including in technology that supports business processes. With the technological developments that occur, many have a big influence on the business

world in the implementation of information systems. Effectiveness in work is a form of the influence of a computerized system, and the main thing is to speed up the performance of workers so that the work assigned can be completed before the specified time.

In the era of rapid development of information and communication technology, digital banking has become an important aspect of the banking industry. Banks around the world have adopted digital banking services as a way to meet the growing needs of consumers in providing digital banking services in Indonesia.

Technological developments have enabled banks to provide various banking services through electronic platforms, such as internet banking and mobile banking applications. Therefore, the quality of electronic services, transaction security and the quality of mobile banking applications are key factors that can influence customers' use of digital banking.

Banking has a big role in increasing economic growth and equitable development towards improving people's living standards (Sabir et al., 2012). By adapting to technological developments through digital transformation in the banking system, banking services in Indonesia are required to switch to *serviceselectronic banking* or digital banking.

Digital banking has always been a preference for current account holders (Singh et al., 2017). It is important to mention here that customer experience has always been an important consideration for organizations in carrying out this business model (Mansoor et al., 2020). Apart from that, the recent pandemic (COVID-19) is also one such situation

uncertainty that helps customers, employees and society at large realize changes in business models and move to digital services (Seetharaman, 2020).

## LITERATURE REVIEW

### Management information System

According to McLeod, Raymond & Schell (2004) defines that a management information system (MIS) is a computer-based system, other networks that can provide information for several users to support management functions and decision-making functions. According to Syamsi (2000) states that a management information system (SIM) is an information network that leaders need to carry out their duties, especially in making decisions. According to (Zulaikha & Radityo, 2008) states that: SIM is a way of managing information work using a systems approach based on management principles. According to (Jogiyanto, 2005) management information systems are the application of information systems within an organization to support the information needed by all levels of management.

### Management Information System Components

According to Azhar Susanto (2004), the components in management information are integrated in a system that works harmoniously in order to produce information that can be relied on by users. In the management information system concept, what must be integrated are all elements and sub-elements related to forming a quality management information system. These elements are also referred to as accounting information system components which consist of hardware, software, brainware, procedures, databases and communications networks. The components of the management information system are; 1. Hardware, physical equipment that can be used to collect, enter, process, store and output the results of data processing in the form of information. 2. Software, a collection of programs used to run a computer or certain applications on a computer. 3. Brainware, resources humans are the most important part of the management information system component, 4. Procedures are a series of activities or actions that are carried out repeatedly in the same way. 5. A database is an organization of a collection of interrelated data so as to facilitate the process of searching for information, and computer networks and data communications.

## Electronic Service Quality

Quality of electronic services (*e-service quality*) is a collection of services that includes information on products or services offered, distribution, methods of purchasing or purchase orders, and complaint services for customers. All of these services are provided by companies that have businesses or enterprises whose systems are mostly online-based. Quality of electronic services (*e-service quality*) is a collection of services that includes information on products or services offered, distribution, purchasing methods or *purchase order* and complaint services for customers provided by companies that have businesses or businesses whose systems are mostly online-based.

According to Lasyakka (2015) Electronic service quality is one model of service quality. Electronic service quality can be interpreted as the quality of electronic media services. Service providers must provide quality services as it is a source of competitive advantage. Kotler & Keller (2012) also stated that as parties who buy and consume services, customers are the ones who assess the quality of a company's services. This statement means that customers who use *mobile application* also has the right to assess the quality of the service *mobile application* used. According to Zeithaml et al. (2013), electronic service quality is defined as the ability of a company to provide assistance in the form of a shopping experience, payment in a transaction or purchase of goods and delivery of products effectively and efficiently. Then, according to Olivia & Fahmi (2017) the core scale of electronic service quality is divided into four parts, namely *efficiency*, *fulfillment*, *reliability* and *Privacy*.

## Transaction Security

According to Rahardjo (2005) security is something that can prevent fraud or at least detect fraud in an information-based system, where the information itself has no physical meaning. According to Ahmad & Pambudi (2014) security is the ability to store customer information or data from fraud and theft on the internet *banking*. According to Yousafzai (2003) in the context of internet banking, security threats are attacks or misuse either through transaction networks and data transmission through unauthorized access to accounts by means of false authentication.

According to Lee (2019) security is an important factor in internet services *banking* which can increase customer confidence to continue using it. The higher the level of security provided by the company to consumers/customers who use it *mobile banking*, so that customers will be increasingly interested in making transactions using the services provided.

## Application Service Quality *Mobile Banking*

According to Arianto (2018) Service quality can be defined as focusing on meeting needs and requirements, as well as on timeliness to meet customer expectations. Service Quality applies to all types of services provided by the company while the client is at the company. According to Kotler & Keller (2016) "quality is the completeness of the features of a product or service that has the ability to provide satisfaction to a need". According to Kasmir (2017), service quality is defined as the actions or actions of a person or organization aimed at providing satisfaction to customers or employees.

According to Nurastuti (2011) the term *mobile banking* considered closely related to the meaning of banking facilities through mobile communications such as *cell phone*, with the

provision of almost the same facilities as an ATM, except for taking money *cash*. Mallat 2004 states that service *mobile banking* can operate bank services through *mobile device*.

Gummesson & Lovelock (2004) revealed that service quality *mobile banking (m-banking)* into four parts, namely:

- a. *Speed*, namely the speed and convenience of customers in carrying out m-banking services.
- b. *Security*, namely the guarantee of confidentiality in every m-banking service.
- c. *Accuracy*, namely precision and accuracy in obtaining information about m banking.
- d. *Trust*, namely customer trust in the bank where m-banking services are provided

## Digital Banking

According to Financial Services Authority Regulation Number 12 /Pojk.03/2018, it is stated that Digital Banking Services are services for Bank customers to obtain information, communicate and carry out banking transactions via electronic media which were developed by optimizing the use of customer data in order to serve customers better. fast, easy, and according to needs (*customer experience*), and can be carried out completely independently by the customer by paying attention to security aspects. This allows prospective customers and/or bank customers to carry out transactions including registration, opening an account, banking transactions (cash withdrawals, transfers and payments), and closing accounts, including obtaining other information and transactions outside banking products, including financial advice (*financial advisory*), investment, electronic-based trading system transactions (*e-commerce*), and other needs of bank customers.

## METHODS

In this research, the author used a qualitative research design using descriptive research methods. Qualitative descriptive research aims to describe, depict, explain, explain and answer in more detail the problems to be studied by studying as closely as possible an individual, a group or an event. In qualitative research, humans are the research instrument and the written results are in the form of words or statements that correspond to the actual situation. The research object used is banking in Indonesia.

SWOT analysis is a technique used to identify strengths, weaknesses, opportunities, and threats for a particular business or even project. Although most Widely used by organizations from small businesses and non-profits to large corporations, SWOT analysis can also be used for personal and professional purposes. (Daniel Nugraha, 2020)

SWOT analysis can help in identifying strengths, weaknesses, opportunities and threats for a particular project or business plan as a whole. whole. It's a tool that can help teams plan strategically and stay ahead of market trends. Below, we explain each part of the SWOT framework and provide step-by-step instructions to assist in conducting your own analysis. Although simple, SWOT analysis is a powerful tool to help identify competitive opportunities for improvement. This way you can work to improve your team and business while staying ahead of market trends.

This research aims to analyze marketing strategies in increasing the use of Digital Banking. Marketing strategies carried out in facing competition using SWOT analysis. According to Rangkuti (2015) SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats) is one of the tools that can be used to develop strategies that are based on situations around the company that influence company performance.

When conducting a SWOT analysis, it is important to deeply involve the company's founders and leaders, because this is not a task that can be delegated to someone else. A SWOT analysis should also be conducted regularly, at least once or twice a year, to ensure

companies are proactively analyzing their market to continually make improvements in various aspects of the organization

## RESULT AND DISCUSSION

Throughout 2022, the banking industry has succeeded in contributing large profits during the transition period of the Covid-19 pandemic. This is demonstrated by the impressive performance of a number of banking issuers. There is PT Bank Rakyat Indonesia Tbk (BBRI) at the top, whose profits reached IDR 50 trillion. Followed by PT Bank Mandiri Tbk (BMRI) and PT Bank Central Asia Tbk (BBCA) whose net profit reached IDR 40 trillion.



**Figure 1.** 10 banks with the largest profit performance throughout 2022 (Scale in Trillions)

The following are 10 banks with the largest profit performance throughout 2022 (Aprilia, 2023):

### BRI

PT Bank Rakyat Indonesia Tbk (BBRI) or BRI managed to record impressive performance in 2022 by making a profit of IDR 51.5 trillion. This profit was recorded as a high increase of 67.15% compared to the achievement in 2021 where BRI's net profit was recorded at IDR 32.22 trillion.

### Mandiri Bank

PT Bank Mandiri Tbk (BMRI) managed to record a net profit of IDR 41.2 trillion throughout 2022. This gain increased 46.89% from the previous year of IDR 28.02 trillion.

### BCA

PT Bank Central Asia Tbk (BBCA) or BCA recorded a net profit of IDR 40.7 trillion throughout 2022. BCA President Director Jahja Setiaatmadja said that this profit increased by 29.6% compared to the previous period, namely IDR 31.42 trillion.

### BNI

PT Bank Negara Indonesia Tbk (BBNI) or BNI posted a net profit of IDR 18.3 trillion throughout 2022. This figure is up 68% compared to net profit in 2021 with a profit of IDR 10.89 trillion.

BNI President Director, Royke Tumilaar, said that the realization of this net profit was far above the achievement before the pandemic and was the highest record in BNI's history.

### CIMB Niaga

Bank CIMB Niaga Tbk (BNGA) recorded a consolidated net profit of IDR 5.09 trillion throughout 2022. This figure increased 24.35% on an annual basis compared to net profit in 2021 of IDR 4.09 trillion.

### BSI

PT Bank Syariah Indonesia Tbk (BRIS) or BSI recorded a net profit of IDR 4.26 trillion or an increase of 40.68% throughout 2022. This achievement is the company's highest profit in the history of the establishment of sharia banks in Indonesia. Previously, BSI posted a net profit of IDR 3.02 trillion in 2021. PT Bank Tabungan Negara Tbk (BBTN)

### Mega Bank

PT Bank Mega Tbk (MEGA) managed to record a net profit of IDR 4.05 trillion throughout 2022. This figure grew by 1.11% from the previous IDR 4.01 trillion in 2021.

### Bank OSBC NISP

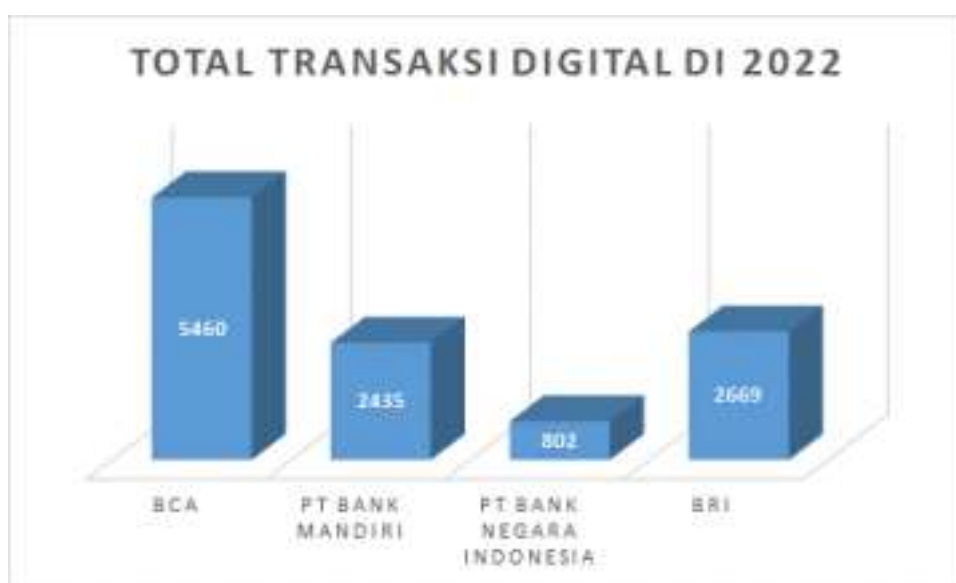
PT Bank OSBC NISP Tbk (NISP) managed to record a net profit of IDR 3.3 trillion at the end of 2022. This value increased 32% compared to 2021 which amounted to IDR 2.5 trillion.

### Danamon Bank

PT Bank Danamon Indonesia Tbk (BDMN) managed to record a consolidated net profit of IDR 3.3 trillion throughout 2022. This amount increased by 110%, from the previous year's net profit of IDR 1.41 trillion.

### BTN

PT Bank Tabungan Negara Tbk (BBTN) or BTN recorded positive performance in 2022. Net profit as of December 31 2022 was IDR 3.04 trillion, or an increase of 28.15% from IDR 2.37 trillion in the same period the previous year.



**Figure 2.** total digital transactions in 2022 (Scale in Trillions)

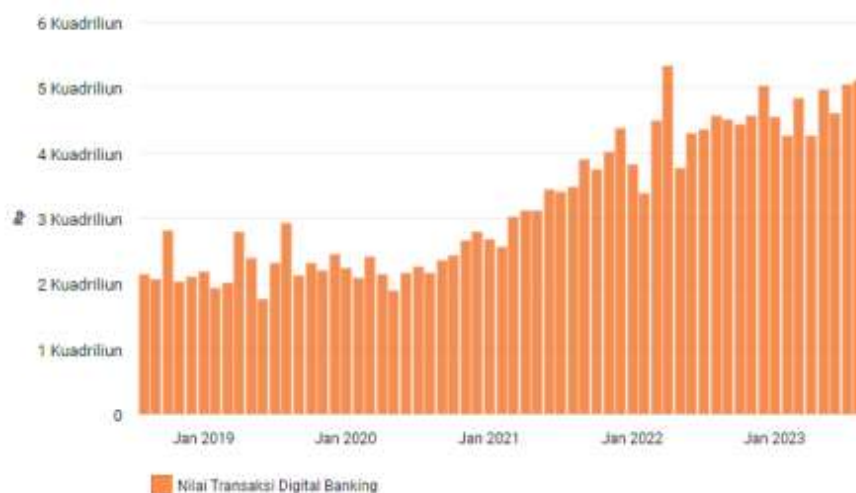
According to Anam (2023), the trend of using mobile banking is increasing day by day, in line with the high level of public awareness of the ease and comfort of carrying out financial

activities in the era of digital technology. This can be seen from transactions *mobile banking* in several large banks, such as PT Bank Central Asia Tbk or BCA which recorded growth of 34.8% from IDR 4,049 trillion in 2021 to IDR 5,460 trillion in 2022.

Likewise, mobile banking transactions at PT Bank Mandiri (Persero) Tbk experienced growth of up to 49.2% to IDR 2,435 trillion in 2022. In fact, in the previous year, transactions *mobile banking* Mandiri was only recorded at IDR 1,631 trillion. On the other hand, transactions

PT Bank Negara Indonesia (Persero) Tbk or BNI's mobile banking also experienced growth of 30.4% from IDR 615 trillion in 2021 to IDR 802 trillion in 2022.

What's interesting is the growth in transactions *mobile banking*. The biggest experience was experienced by PT Bank Rakyat Indonesia (Persero) Tbk or BRI. In 2022, BRI will record transactions *mobile banking* the company has touched IDR 2,669 trillion. This amount has increased by almost 100% compared to transactions in the 2021 period which were only recorded at IDR 1,345 trillion. Not only in 2022, transactions will increase *mobile banking*. This will also happen in 2023, where in the first quarter of 2023, the number of BRI *mobile banking* financial transactions will increase by 99.07% yoy with a total transaction value reaching IDR 884 trillion and the number of users reaching more than 26.3 million users.



**Figure 3.** Digital Banking Transactions Reaching IDR 5.1 Quadrillion in August 2023

Based on data from Bank Indonesia (BI), throughout August 2023 the value of digital banking transactions nationally reached IDR 5,098.6 trillion or around IDR 5.1 quadrillion. This value increased by 1.3% compared to July 2023 (*month-on-month*), and grew 11.9% compared to the previous year (*year-on-year*). Transaction value *digital banking* or digital banking listed above is a combination of transactions *internet banking*, SMS /*mobile banking*, and *phone banking*.

According to the definition from the Financial Services Authority (OJK), *internet banking* is a banking transaction using a computer and the internet via a special bank website.

Then SMS/*mobile banking* is a banking transaction using a cellphone, either via an applications *smartphone* as well as short text message services provided by the bank. Whereas *phone banking* is a banking transaction via telephone, where the customer contacts the bank service center, then the bank processes the customer's transaction through special staff or an automatic program.

If broken down by channel, transaction value *digital banking* national level in August 2023 are as follows (Ahdiat, 2023):

- Transaction *internet banking*: IDR 3,654.6 trillion
- SMS Transactions/*mobile banking*: IDR 1,443.8 trillion
- Transaction *phone banking*: IDR 143.7 billion
- Total: IDR 5,098.6 trillion

Electronic service quality has a significant influence on digital banking use:

- The Electronic Service Quality model with variables consisting of ease of use, customer contact, reliability, responsiveness, security/privacy, and application design influences the loyalty of digital bank application users
- Perceived quality of mobile banking applications, including security of personal data and performance in financial transactions, influences customer satisfaction and loyalty. The multidimensional concept of mobile banking service quality, including security/privacy, practicality, design/aesthetics, fun, and sociality, influences trust and commitment/satisfaction
- Service quality is the most important element for progress in the digital banking services industry
- Therefore, it can be concluded that the quality of e-services, including ease of use, customer contact, reliability, responsiveness, security/privacy, and application design, has a significant influence on customer satisfaction and loyalty, which can lead to the advancement of the digital banking services industry. By improving these factors, banks can increase customer satisfaction and loyalty, which can lead to the advancement of the digital banking services industry.

Electronic transaction security has a significant influence on the use of digital banking:

- The Financial Services Authority (OJK) emphasizes the importance of strengthening banking capital to be able to develop digital banking services to meet customer needs, especially millennials. However, this easy service certainly comes at a price. Therefore, banks must strengthen capital and establish a strong security and supervision system to prevent data leaks
- The current model adopted in Internet Banking systems is based on several layers of security, consisting of a variety of parallel solutions and mechanisms aimed at protecting banking applications and customer data, providing identification, authentication and authorization
- Maintaining data security and protecting customer privacy from cyber threats is the biggest challenge for players in the banking sector. Therefore, banking sector players must pay attention to data security and customer privacy to maintain customer trust
- Banks must always apply secure information technology and pay attention to the risks faced by banks and customers to maintain the security of electronic transactions. From these findings, it can be concluded that electronic transaction security has a significant influence on the use of digital banking. Therefore, banks must pay attention to customer security and privacy, and implement secure information technology to maintain customer trust and prevent data leaks.

The quality of mobile banking application services also has a significant influence on digital banking use:

- The quality of mobile banking services is an important element for the progress of the mobile banking service industry



- Perceptions of the quality of mobile banking applications, including personal data security and financial transaction performance, influence customer satisfaction and loyalty
- The multidimensional concept of mobile banking service quality, including security/privacy, practicality, design/aesthetics, enjoyment, and sociality, influences trust and commitment/satisfaction
- Electronic Service Quality Model with variables consisting of ease of use, customer contact, reliability, responsiveness, security/privacy, and application design influence the loyalty of digital bank application users
- Service quality is the most important element for the progress of the mobile banking service industry

From these findings, it can be concluded that the quality of mobile banking application services has a significant influence on customer satisfaction and loyalty, which can lead to progress in the digital banking service industry. Therefore, banks must pay attention to the quality of mobile banking application services, including security/privacy, ease of use, customer contact, reliability, responsiveness, and application design, to increase customer satisfaction and loyalty and prevent data leaks.

A SWOT analysis of mobile banking applications regarding digital banking use can be carried out by considering the strengths, weaknesses, opportunities and threats of the application. The following is a SWOT analysis of mobile banking applications:

#### Strength:

- Ease of use of mobile banking applications can increase customer satisfaction· Good quality mobile banking application service can increase customer trust
- Mobile banking applications can increase efficiency and productivity in carrying out banking transactions

#### Weakness:

- Limited internet and network access can hinder the use of mobile banking applications
- Security and privacy risks of customer data can reduce customer trust· Limited features and services in mobile banking applications may limit use

#### Opportunity:

- Technological developments and digitalization can increase demand and use of mobile banking applications
- There is an opportunity to improve the quality of mobile banking application services by adding new features and services
- There is an opportunity to improve the security and privacy of customer data by developing a better security system

#### Threat:

- Tight competition from other banks in providing better mobile banking applications
- Cybersecurity threats and customer data leaks can reduce customer trust
- Changes in government regulations and policies may affect the use of mobile banking applications

From the SWOT analysis, it can be concluded that mobile banking applications have great potential to increase the use of digital banking. However, banks must pay attention to the security and privacy of customer data, as well as improve service quality mobile banking

application by adding new features and services to increase customer satisfaction and face competition from other banks.

## CONCLUSIONS

It can be concluded that electronic service quality, transaction security, and mobile banking application service quality have a significant influence on the use of digital banking:

Electronic Service Quality:

- Electronic service quality, including ease of use, customer contact, reliability, responsiveness, security/privacy, and application design, has a significant influence on customer satisfaction and loyalty
- Electronic service quality is an important element for progress in the digital banking services industry

Transaction Security:

- Electronic transaction security has a significant influence on the use of digital banking
- Security and privacy risks of customer data can reduce customer trust: Banks must always apply secure information technology and pay attention to the risks faced by banks and customers to maintain the security of electronic transactions

Mobile Banking Application Service Quality:

- Mobile banking application service quality, including security/privacy, ease of use, customer contact, reliability, responsiveness, and application design, has a significant influence on customer satisfaction and loyalty
- *Mobile banking service quality is a vital element for the progress of the mobile banking service industry*
- From this conclusion, it can be concluded that banks must pay attention to the quality of electronic services, transaction security, and the quality of mobile banking application services to increase customer satisfaction and loyalty and prevent data leaks. By improving these factors, banks can increase the use of digital banking and advance the digital banking services industry.

## ACKNOWLEDGEMENT

The following are some suggestions that can be given in the research "Analysis of Electronic Service Quality, Transaction Security, and Mobile Banking Application Service Quality on the Use of Digital Banking":

1. Add other variables that can influence digital banking use, such as prices and promotions.
2. Using more varied research methods, such as qualitative methods or mixed-methods, to obtain more complete and in-depth data.
3. Expand the sample of respondents used so that it can represent a wider population.
4. Use more complex analysis methods, such as multiple regression analysis or path analysis, to obtain more accurate and in-depth results.

- Conduct similar research on other banks to compare results and find out differences in digital banking usage between banks.

By implementing these suggestions, it is hoped that research can provide more complete and accurate results regarding the influence of electronic service quality, transaction security, and mobile banking application service quality on the use of digital banking.

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