

## ANALYSIS OF ELECTRONIC BANKING ( E-BANKING) USERS IN INDONESIA DURING AND AFTER THE COVID-19 PANDEMIC

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### ABSTRACT

*The purpose of this study is to examine the differences in the impact of the covid-19 pandemic on electronic banking users. This study used the Wixolcon Test analysis method to test the differences between paired data. Testing comparisons between observations before and after being given treatment and knowing the effectiveness of a treatment. The dependent variables in this research are mobile banking, internet banking and the dependent variable is the covid-19 pandemic. This research uses a quantitative research approach. The data source is from the official website of the Indonesian Stock Exchange, namely [www.idx.co.id](http://www.idx.co.id) in 2019 - 2022. The total research population was 47 companies. The sampling method was purposive sampling so that a total sample of 39 companies was obtained. The results of the Wixolcon test, namely on the mobile banking variable, show that there are differences in mobile banking users in Indonesia during and after the Covid-19 pandemic. Regarding the internet banking variable, the results of internet banking research show that there are differences in internet banking users in Indonesia during and after the Covid-19 pandemic.*

### KEYWORDS

*mobile banking, internet banking, pandemic covid-19*



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## INTRODUCTION

The Covid-19 pandemic is happening globally. The impact of the pandemic is the social distancing policy, namely by limiting human activities outside the room. These restrictions have an impact on human lifestyles tend to carry out activities at home and online. These conditions spurred banks to improve services to customers. One of the banking efforts must improve services in electronic banking in order to encourage people to transact online and have an impact on improving banking performance (Bidari & Nurviana, 2020). Digital banking services are the development of electronic banking services with the aim of providing fast and easy services so that customers do not need to

come to bank branch offices by paying attention to aspects of security and confidentiality of customer data (Sain & Hayat, 2023)

According to the Indonesian Economic Report (2022) there has been an increase in the use of electronic banking from 2019 to 2022 by 15%. The highest increase in the use of internet banking. Electronic banking makes it easy for customers to make transactions efficiently and effectively. Fintech had an impact during the Covid-19 pandemic because fintech contributed by helping people who have not received transaction services at formal financial institutions and the use of fintech can increase state revenues during a pandemic with the support of strengthening policies and regulations for inclusive fintech growth (Marginingsih, 2021). The increased use of e-banking during the pandemic has had an impact on improving bank financial performance. profitability is an aspect that investors pay attention to in assessing company performance (Aryanto, 2020). Because e-banking services make it easy for people to transact easily and at any time and are not constrained by location and time as long as there is an internet network. The use of e-banking technology provides more cost-effective and efficient financial services than traditional financial services (Ben Romdhane et al., 2023). Electronic banking is divided into two, namely mobile banking and internet banking (Melky Fuadi et al., 2022). Research from (Fu & Mishra (2022) showed an increase in e-banking users during the Covid-19 pandemic due to restrictions on human activities resulting in all activities being carried out online. Based on the background explanation above, the authors are interested in conducting research on a comparison of the influence of mobile banking and internet banking users in Indonesia during and after the pandemic. Research on the use and adoption of e-banking has not been widely carried out so that it will provide information and contribute to banks to improve services to customers.

### **Theoretical basis**

#### **Information Systems and Information Technology**

The fundamental parts that a company must have for operational activities are information systems and information technology (Melky Fuadi et al., 2022). The basic needs of companies in carrying out company activities are information systems and information technology aimed at increasing efficiency and effectiveness. Apart from that, information systems and information technology are the basis for decision making by company management.

#### **Technology Organization Environment (TOE) Theory**

The theory that discusses the adoption of technological innovation is called Technology Organization Environment (TOE) Theory (Ben Romdhane et al., 2023a). three factors in TOE Theory namely organization, technology, and environment (Melky Fuadi et al., 2022).

#### **Information Systems Success Model (IS Success) Theory**

Aspects that influence the results of the adoption of information systems and information technology are called the Information Systems Success Model (IS Success) Theory (DeLone & McLean, 2003). The results of system and information technology adoption are service quality, net benefits, willingness to use, use and user satisfaction. IS Success Theory is used with the aim of explaining the final impact experienced by a company after adopting information systems and technology.

#### **Electronic Banking**

Electronic banking is a number of banking activities that enable customers of the bank concerned to be able to access available information regarding balance reports, transfers, bill payments and so on via telecommunications networks without needing to leave their home or office. Based on several definitions regarding Ebanking above, it can be concluded that E-banking is a banking activity that can be carried out by customers

either from home, place of business or in other locations that are not at real bank locations (branch offices) using communication media such as computer, cell phone or smartphone (Islam et al., 2019; Kwaku & Mawutor, 2014; Mukherjee & Nath, 2003).

## **RESEARCH METHOD**

This research uses a comparative analysis method using the Wilcoxon Test to see the comparison of the influence of the independent variable on the dependent variable. The independent variables in this study include mobile banking, internet banking and the dependent variable is the Covid-19 pandemic. The nature of this research is associative and comparative research because it discusses the relationship between two or more variables and compares variables to see which variable is the best or not (Ghozali, 2017). The approach used in this research is a quantitative research approach because the data used is secondary data for the period 2019-2022 with details of 2019-2020, the year during the pandemic, while 2021-2022 is the year after the Covid pandemic. Data obtained from the official website of the Indonesia Stock Exchange, namely [www.idx.co.id](http://www.idx.co.id). The population of this study were 47 banking companies listed on the Indonesia Stock Exchange. The sampling method uses purposive sampling, where the sampling method is carried out using a certain method so that a sample of 36 banking companies is obtained. First, carry out a normality test, if the data is normal distributed, then continue with the Paired t-test, whereas if the data is not normally distributed, then carry out the Wilcoxon test (Rimbawan, 2022)

### **The Influence Of Covid-19 On Electronic Banking Users In Indonesia During And After The Pandemic**

Mobile banking is a service provided by banks to make it easier for customers to make transactions anywhere and anytime (Chiu et al., 2017). Mobile banking is useful for customers in implementing the government's stay at home and physical distancing policies to break the chain of virus spread during the Covid-19 pandemic (Iskandar et al., 2021). Iskandar et al., (2021) research results state that there has been an increase in mobile banking users during the Covid-19 pandemic because mobile banking has become an alternative for low contact (online) transactions and a solution when implementing social distancing and doing work for home. So there is a difference in the number of users during and after the Covid-19 pandemic. Mobile Banking has had an effect on increasing transactions during the Covid-19 period, where to carry out activities such as fund transfers, balance checks, account mutation checks, or payments, customers do not need to go to a branch office or ATM. During the pandemic, clients can only make transactions simply and comfortably via cellphones or computer gadgets (Rohmawati & Kuntadi, 2023).

Internet banking is an internet-based banking service that aims to provide convenience to customers in making transactions using the internet network (Kwaku & Mawutor, 2014). Another definition of internet banking is a banking service product that can carry out various banking transactions via internet access (Syahputra & Bina Karya Tebing Tinggi, n.d.). Online activities during the Covid-19 pandemic increased public awareness of online banking transactions (Suharsono, Riyanto ; Rahmasari, 2016). During the Covid-19 pandemic there was an increase in internet banking users from before Covid because transaction activities did not have to come to branch offices and simply by using a mobile phone connected to the internet network, customers could make transactions easier (Aiyubbi et al., 2021). Based on the explanation above, the hypothesis can be formulated:

**H1: There are differences in mobile banking users during and after the Covid-19 pandemic**

**H2: There are differences in internet banking users during and after the Covid-19 pandemic**

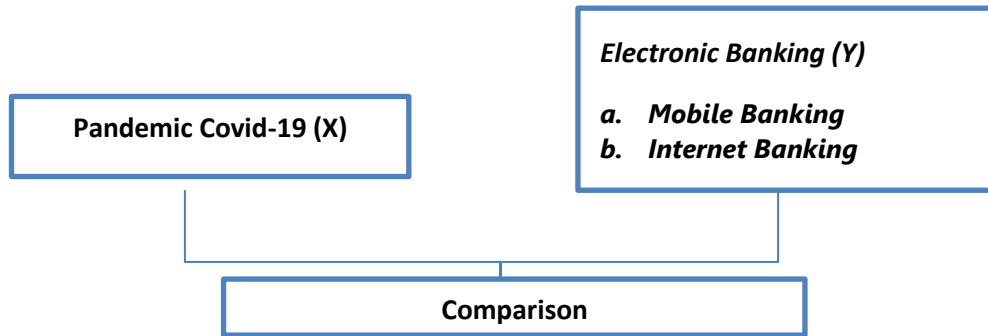


Figure 1. Research Model  
Source: Researcher (2023)

## RESULT AND DISCUSSION

Table 1. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Mobile Banking During Pandemic	72	.00	288516225.00	10065152.9861	37798189.62945
Internet Banking During Pandemi	72	.00	37891090.00	3201233.5000	8155817.01221
Mobile Banking After Pandemi	72	.00	4472001488.00	154167430.7778	745459171.66204
Internet Banking After Pandemi	72	.00	44991220.00	4549587.1111	10597429.07050
Valid N (Listwise)	72				

Table 2 .Normality Test

Variable	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
mobile banking 2019-2020	.327	71	.000	.509	71	.000
internet banking 2019-2020	.399	71	.000	.410	71	.000
mobile banking 2021-2022	.346	71	.000	.416	71	.000
internet banking 2021-2022	.377	71	.000	.489	71	.000

The normality test is a test carried out with the aim of assessing the distribution of data in a group of data or variables, whether the data distribution is normally distributed or not (Ghozali, 2017). The research data is normally distributed if the significance value on the normality test is > (more than) 0.05/ 5%. Based on the normality test results in table 2 that the mobile banking and internet banking variables have a significance result of 0.000 < 0.05 (5%), it is concluded that the research data is not normally distributed. Because the research data were not normally distributed, the Wixolcon test was carried out.

Tabel 3. Hasil Uji Wixolcon

Prob	Mobile Banking 2021 2022- Mobile Banking 2019 2020	Internet Banking 2021 2022 - Internet Banking 2019 2020
Z	-5.426 <sup>b</sup>	-4.643 <sup>b</sup>
Asymp. Sig. (2-tailed)	.000	.000

The Wixolcon test functions to test differences between paired data. Test comparisons between observations before and after treatment and determine the effectiveness of a treatment. The results of the Wixolcon test in table 2 of the mobile

banking variable have a significance value of  $0.000 < (\text{Less than}) 5\% (0.05)$  so that **Ha accepted** the conclusion that there are differences in mobile banking users in Indonesia during and after the Covid-19 pandemic. In the internet banking variable the significance value is  $0.000 < (\text{less than}) 5\% (0.05)$  so that **Ha accepted** and the conclusion is that there are differences in internet banking users during and after the Covid-19 pandemic

## DISCUSSION

### **The impact of the covid-19 pandemic on mobile banking in Indonesia**

The results of this study stated that the mobile banking variable **Ha accepted** so that there were differences in mobile banking users in Indonesia during and after the Covid-19 pandemic because during the pandemic social distancing and work from home policies were implemented and many banking branch offices limited direct service to branch offices and customers are directed to make transactions using the mobile banking application so that there is an increase in mobile banking users during the pandemic and after the pandemic because people are used to using online applications. This research is consistent with Mobile banking being beneficial for customers in carrying out government policies to stay at home and physical distancing to break the chain of virus transmission during the Covid-19 pandemic (Iskandar et al., 2021). The results of Iskandar et al (2021) state that there has been an increase in mobile banking users against the Covid-19 pandemic because mobile banking is an alternative for low-contact (online) transactions and solutions when implementing social distancing and doing work for home. So there are differences in the number of users during and after the Covid-19 pandemic. Mobile Banking had an effect on increasing transactions during the Covid-19 period, where to carry out activities such as transferring funds, checking balances, checking account mutations, or making payments, customers did not need to go to a branch office or ATM. During a pandemic, clients can only transact simply and comfortably via cell phones or computer gadgets (Rohmawati & Kuntadi, 2023). Based on the results of this study in accordance with the theory of IS Success Theory is used with the aim of explaining the final impact experienced by the company after adopting systems and information technology. The final impact of adopting mobile banking is to make it easier for customers to make transactions and increase banking profitability and the User Satisfaction Variable discusses satisfaction in using services so that if customers are satisfied with the services provided by banks, banking profits can increase (DeLone & McLean, 2003)

### **The influence of the Covid-19 pandemic on internet banking users in Indonesia**

The results of this study stated that the internet banking variable **Ha accepted** so that there were differences in internet banking users in Indonesia during and after the Covid-19 pandemic. The interpretation is that there has been an increase in internet banking users during and after Covid as a result of implementing social distancing and other reasons that internet banking is a banking service that uses internet access so that users are more effective and efficient in using internet banking services that can be accessed anywhere and connected to the internet. The results of research on internet banking, namely online activities during the Covid-19 pandemic increased public awareness of online banking transactions (Suharsono, Riyanto ; Rahmasari, 2016). During the Covid-19 pandemic there was an increase in internet banking users from before Covid because transaction activities did not have to come to branch offices and simply by using a mobile phone connected to the internet network, customers could make transactions easier (Aiyubbi et al., 2021). These results are in accordance with the theory of IS Success Theory in the category of information quality variables discussing the output generated on the internet banking output

produced, namely internet banking applications. The next category is System Quality Variable related to the characteristics of the system used in internet banking, namely the ease of using the system and the ease of learning the system. the impact of this convenience can underlie customers using internet banking in transactions so as to increase company profits (DeLone & McLean, 2003b).

## CONCLUSION

Based on the research results, it can be concluded from the mobile banking variable that there are differences in mobile banking users in Indonesia during and after the Covid-19 pandemic. Regarding the internet banking variable, the results of mobile banking research show that there are differences in mobile banking users in Indonesia during and after the Covid-19 pandemic. The next researcher's suggestion is to expand the scope of research and add research variables regarding electronic banking

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