

## Customer Service Analysis, Application of Technology Applications, Product Variations on Customer Satisfaction (Study on Livin By Mandiri KCP Jayapura Business Center Products)

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### Abstract

This research was conducted to test whether *customer service*, product variations, application of technology applications take effect partially and simultaneously on customer satisfaction. The study was conducted at Bank Mandiri KCP Jayapura Sentra Bisnis on Livin by Mandiri products using a sample of 96 people using the SPSS version 27 statistical test tool. Study this test: classical assumption test, namely normality test, heteroscedasticity test, multicollinearity test, multiple regression analysis, hypothesis testing (t test and f test). The results showed that *customer service*, application of technology applications, and product variations have a partial and simultaneous impact on customer satisfaction and the application of technology applications is more dominant in influencing customer satisfaction

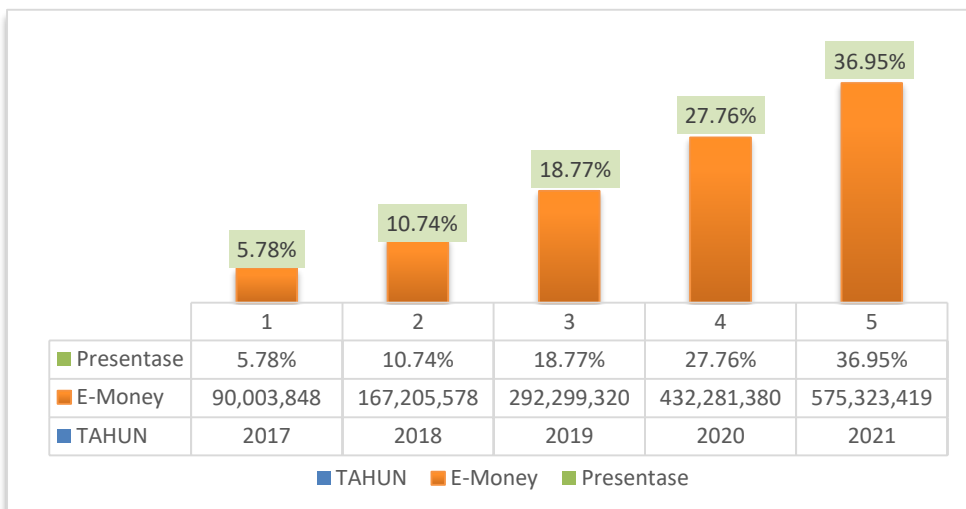
**Keyword:** customer service, application of technology applications, product variations and customer satisfaction

**INTRODUCTION**

The Financial Services Authority (OJK) encourages banking digitalization by issuing OJK regulation No.12 / poj.03 / 2018 concerning the Implementation of Digital Banking Services to Commercial Banks, states " digital banking services are electronic banking services developed by optimizing the use of customer data in order to serve customers more quickly, easily and according to *customer experience* and can be carried out independently by taking into account security aspects", with the existence of regulations from the OJK, it means that, the digital transformation carried out by the banking industry is more than just *online* and *mobile banking services* .

Service quality is the level of excellence in service performance (Zeithaml et al., 2011) and is seen as an important success factor for companies to differentiate themselves and be competitive in the market. (Hossain et al., 2021 ; Parasuraman et al., 1985, 1988). Internet banking, a form banking electronic , is a portal where clients could utilise various service banking like To do payment bills and investments (Raza et al., 2020) . Besides that , the bank faces many competition in attract and retain customers and for fight that , they must provide service quality Internet banking height that can be direct they for get superiority competitive . (Raza et al., 2020)

According to Bank Indonesia (BI) data, *e-money transactions* in the last five years, namely 2017-2021, total *e-money transactions* increased, this caused the banking industry to become one of the business sectors that managed to have maximum performance. This study reinforces the importance of *digital customer service* as an outstanding cutting-edge technology to improve customer service efficiency (Andrade et.al, 2022).



**Figure 1**  
**Circulating Electronic Money Transaction Instruments**

Source : [https://www.bi.go.id/id/statistik/economics of finance/ssp/uang-elektronik-sum.aspx](https://www.bi.go.id/id/statistik/economics%20of%20finance/ssp/uang-elektronik-sum.aspx)

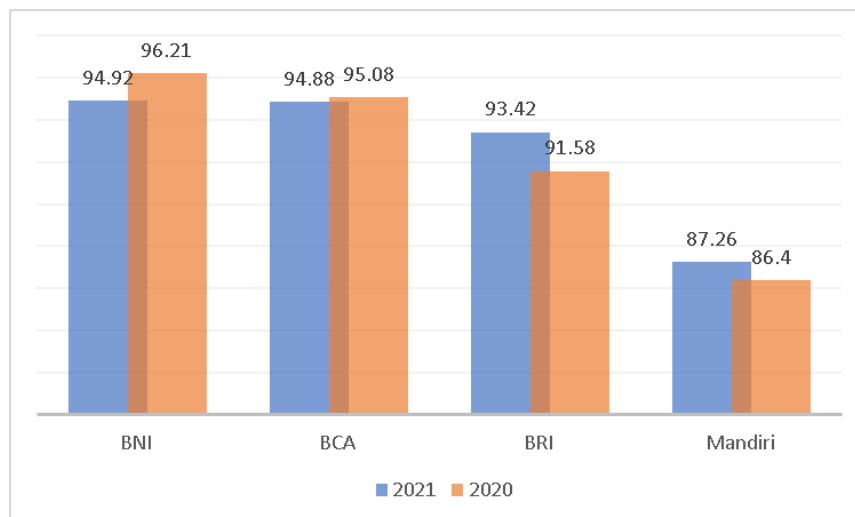
Based on graph 1, it can be explained that the phenomenon related to the use of technology applications in the world of *e-money banking* for five years has increased this is due to users or customers feeling the benefits and ease of transactions. Repair digital technology in design service banking could increase response emotional customer (Levy, 2022) . Indonesian banks are adopting technology, namely information and communication technology (ICT), to automate banking procedures (Alisjahbana et al., 2020) . Perceived ease of use is defined as the extent to which a person believes that using a particular technological system will be effortless (Pratama et.al 2019)

By prioritizing *excellent services* and the precautionary principle for technology users, user confidence will be higher in the use of technology , perceived usefulness and perceived ease of use are the main factors that can increase user confidence to adopt technology applications to improve performance, increase productivity levels, and and effectiveness of users at work. In the banking industry, bankers are paying attention to the mobile shift of their customers as smartphones, tablets and applications are

increasingly being used in consumers' daily lives for work, study, entertainment, shopping. (Omoge et al., 2022) . Innovation technology contemporary this have significant impact \_ profitable sector commercial , allowing banks to give more service \_ good to customer (Farah et al., 2018)

The application of technology applications to banking products is a transformation of existing products and made into a variety of digital media products. The literature on digital banking services mainly focuses on aspects of technology adoption (Levy, 2022) . Service digital banking has fully change how banks run the business (Ahmed et.al, 2021) . One of the banks that has implemented a technology application system, namely Bank Mandiri as Livin' by Mandiri, which was published in October 2021, has become Bank Mandiri's main product for the retail segment that offers various advantages, namely financial services that are integrated in one application product, as well as an ecosystem platform. digital. User intentions will be great when they believe that using technology applications will improve performance and other benefits. Thus, the application of technology applications has been trusted by customers to conduct business or other transactions using *e-money* . Customers will easily switch to another bank if they don't get what they expect, but when customers feel that their expectations and needs are being met when using a product or service, the customer will feel satisfied and make a transaction.

The main key to winning customers' hearts or customer satisfaction according to research results from ( Wulan et al, 2016 ; Saiti et al., 2015) , concluded that by providing value and satisfaction to consumers or customers through service quality, the use of information technology and product variations will increase the level of customer satisfaction.



**Figure 2**  
**The Four Best App Performers of 2020-2021 (%)**  
 Source : Bank Service Excellence Monitor (BSEM)

Based on the table above, according to BSEM, out of the 10 (ten) best mobile banking performances, Bank Mandiri is in 4th (fourth) place after Bank BNI and Bank BCA which have the best mobile banking performance. According to BSEM, Bank BNI and Bank BCA have high interest due to the variety of products launched by banks to complement services through digital technology applications.

Bank Mandiri is known to have the latest application called Livin'by Mandiri, an application with a variety of products that will connect customer needs very easily <https://bankmandiri.co.id/livin> . Bank Mandiri's performance is still below other commercial banks, this shows that the level of customer or customer satisfaction with Bank Mandiri's applications is still low compared to other banks because decisions in the application of information technology applications and product variations are related to service performance to customers.

Work behavior of bank employees or *customer service* does not affect customer satisfaction in using bank products due to several factors, including education level, local culture, and attitudes of application

users. (Saiti et al., 2015; Wulan et al, 2016) . The performance of *customer service* has a positive effect on the use of information technology and variations in bank products, this is because the use of services is widely used by business people and is supported by cultural openness to information on new products and services so that users are very enthusiastic about getting maximum changes for fulfilled work needs. (Yaseen et.al, 2018)

This study aims to examine how the influence of *customer service* , application of technology applications and product variations on customer satisfaction

## **THEORY AND DEVELOPMENT HYPOTHESIS**

### **Customer Service ( *Customer Service* )**

Customer service performance is defined as performance that involves serving or assisting customers in a courteous and/or competent manner (Arvan et al., 2019) . The expansion of digital media makes the defining attributes of the software economy – concentrated on technological innovation for managing customer service processes, the production and commercialization of high-tech products and services – leading to the general economy (Andrade et.al, 2022)

### **Product Variations**

Product variations can make product substitution more likely, because it is easy for customers to find replacement when the product they want is not available (Sweeney et al., 2022). Product variety has long been a topic of interest in the operations management and marketing literature (Sweeney et al., 2022) . In the operations management literature, there are two main streams. The first examines how product variation strategies (both breadth and depth) are used to increase sales, market share, and by extension financial performance (eg Kekre and Srinivasan, 1990; Ton and Raman, 2010; Wan and Sanders, 2017; Boada-Collado and Martnez-de-Albeniz, 2019). The second focuses on the operational complexities introduced when firms employ product proliferation strategies (eg Fisher and Ittner, 1999; Alfaro and Corbett, 2003; Wan et al., 2012)

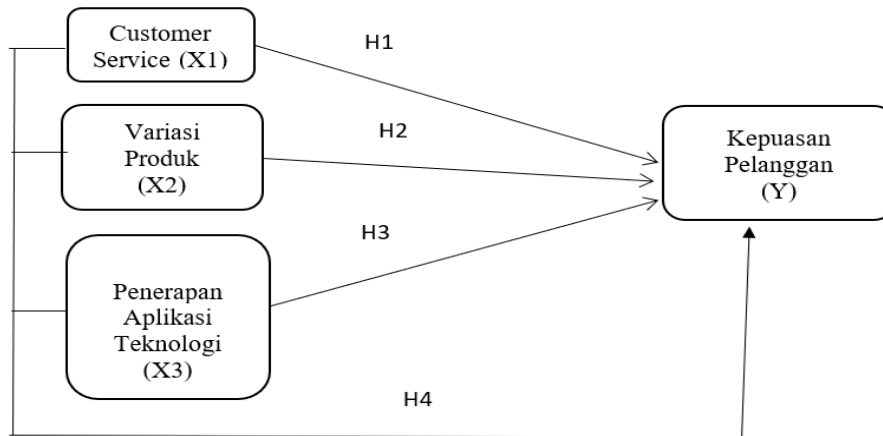
### **Application of Technology Application**

With the advent of foreign banks and financial deregulation, has become very competitive and no retail bank can afford to be second in its application of its technology to customer service (Rees, 1987) . *Perceived Usefulness* (PU) is construction important in depiction original *Technology Acceptance Model* (TAM) and *Technology Continuance Theory* (TCT). Construct this used for predict various factors , such as check intention user for adopt system or technology new , intention sustainable user for measure website and wireless usability , technology new , technology communication (Abdul Rahim et al., 2021) . *Perceived Ease of Use* (PEU) is element important from adoption technology and use sustainable (Abdul Rahim et al., 2021) . Davis (1989) describes PEU as " the degree to which a person's believe that use system certain will free from effort , i.e easy understood or used " (Jen & Hung, 2010). This is construction important in studies system information ( Bilgihan , Barreda , Okumus , & Nusair , 2016; Foroughi et al., 2019). This thing related with evaluation user to the effort involved in development use technology (Venkatesh, 2000). PEU by positive influence intention for utilise smartphone applications ( Okumus & Bilgihan , 2014).

### **Customer satisfaction**

Customer satisfaction is defined as the evaluation of the perceived difference between previous expectations and the actual performance of the product (Omoge et al., 2022) . Delivering high-quality services helps companies meet various requirements – for example, the beneficial consequences of customer satisfaction include higher customer loyalty and market share, along with the ability to attract new customers and increase productivity, financial performance and profitability in the banking industry. (Hossain et al., 2021) . Banks, such as industry service others , offers quality more service \_ good that improves satisfaction customer , make recommendation or stimulate word-of-mouth (WOM), and build loyalty customer (Hossain et al., 2021)

## Research Model



**Figure 3**  
**Research Model**

Source: Processed by Researchers

Service quality plays a very important role in every society, as it has become the basis for how customers interpret online banking and, ultimately, how to interact and operate with online services. (Raza et al., 2020) .

Researcher make conclusion :

Hypothesis 1 : It is suspected that *customer service has a positive effect on customer satisfaction*

Service quality, sales force competence, price perception, and product variations have a positive and significant effect on satisfaction ( Wulan et.al 2016). Researcher make conclusion :

Hypothesis 2 : It is suspected that *product variations have a positive effect on customer satisfaction*

Trust and ease of use technology is a relatively weak and insignificant contributor to overall customer satisfaction (Sikdar et al., 2015) . Though satisfaction customer studied in many context , important for understand impact use technology on satisfaction customers in emerging markets . Studies previously show that problem technology , such as website usability , can affect satisfaction customer (Omoge et al., 2022) .

Researcher make conclusion :

Hypothesis 3 : It is suspected that *the application of technology applications has a positive effect on customer satisfaction*

Utilization of technology applications , product variations , customer service have a positive effect on service satisfaction (Yaseen & El Qirem, 2018) . Researcher make conclusion :

Hypothesis 4 : It is suspected that *customer service , application of technology applications and product variations together have a positive effect on customer satisfaction*

## METHOD STUDY

The population in this study is the customers of Bank Mandiri KCP Jayapura Sentra Bisnis. Sampling with *nonprobability sampling* is a sampling technique that does not provide equal opportunities/opportunities for each member of the population to be selected as samples (Sugiyono, 2013) . The number of Livin'by Mandiri users is not known with certainty by the researchers, so to determine the number of respondents or the sample of this study using the formula from Rao Purba (2015) with a 95% level of validity, a sample of 96

The analytical method begins with validity and reliability tests with the results of all statements and variables being declared valid and reliable. Furthermore, the classical assumption test is carried out, namely normality test, heteroscedasticity test, multicollinearity test, multiple regression analysis, hypothesis testing (t test and f test ) .

## Discussion

### Normality test

Based on Figure 5 above, it shows that the distribution of points is on a diagonal line, it can be concluded that the residual data in the regression model between the variables of Customer Service Performance, Application of Technology Applications, Product Variations, and Customer Satisfaction are normally distributed.

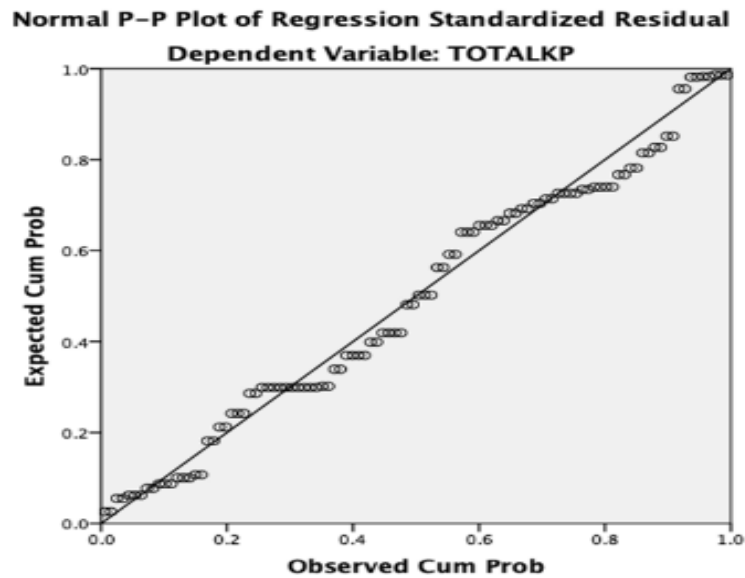


Figure 3  
Normality Test Results  
Source: Researcher with SPSS

### Heteroscedasticity Test

From the results of the Heteroscedasticity test, it can be concluded that there is no Heteroscedasticity or it can be said that there is no similarity of variance from one observer to another.

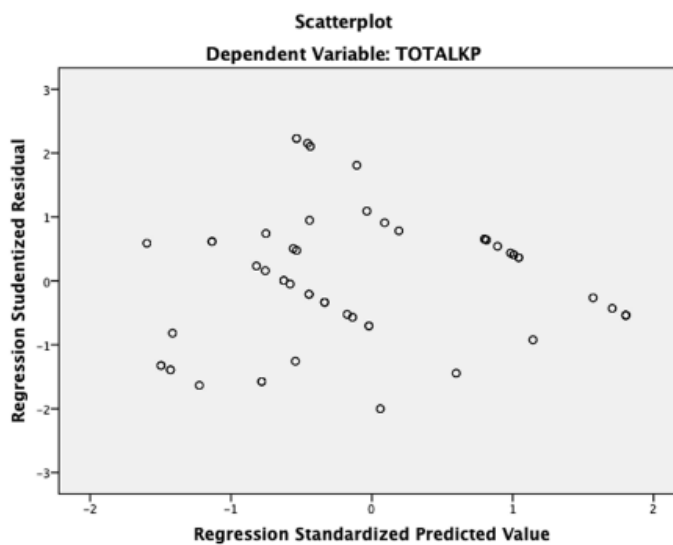


Figure 4  
Heteroscedasticity Test Results

**Multicollinearity Test**

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.853	1.510		.565	.573		
TOTALKCS	.078	.029	.290	2.657	.009	.350	2.856
TOTALVP	.029	.084	.042	.348	.729	.285	3.509
TOTALAT	.374	.089	.485	4.213	.000	.314	3.188

a. Dependent Variable: TOTALKP

**Multicollinearity Test Results**

Source: Researcher with SPSS

From the picture above shows that the *tolerance value* for the performance variable of customer service ( KCS ) which is  $0.350 > 0.100$ , product variation ( VP ) is  $0.285 > 0.100$ , and the application of Technology Applications (AT) is  $0.314 > 0.100$ . And for the VIF value of the Customer Service Performance (KCS) variable  $2.856 < 10$ , Product Variation (VP)  $3.509 < 10$ , and Application of Technology Application (AT)  $3.188 < 10$ . Judging from the tolerance of all independent variables, the value is  $> 0.100$  and the VIF value of all independent variables is  $< 10$ . So it can be concluded that all independent variables do not occur multicollinearity.

**Multiple Regression Analysis**

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.853	1.510		.565	.573		
TOTALKCS	.078	.029	.290	2.657	.009	.350	2.856
TOTALVP	.029	.084	.042	.348	.729	.285	3.509
TOTALAT	.374	.089	.485	4.213	.000	.314	3.188

a. Dependent Variable: TOTALKP

**Figure 6**

**Multiple Linear Regression Test Results**

Source: Researcher with SPSS

P calculation of multiple regression analysis obtained the equation :

$$Y = 0.853 + 0.078 (X1) + 0.029 (X2) + 0.374 (X3) + e.$$

based on the results of the above equation from calculations using SPSS version 27, it can be explained through the following description:

1. The value of 0.853 is a constant which is a constant or a condition when the customer satisfaction variable has not been influenced by other variables, *namely* customer *service* performance variables , product *variations* , and technology application applications .
2. *the* customer service performance *coefficient* is 0.078 , this *value* indicates that, if *the* customer service performance variable an increase of 1 unit will be followed by an increase in the customer satisfaction variable of 0.078

3. The value of the coefficient of variation of p product of 0.374, this value indicates that, if the product variation increases by 1 unit, it will be followed by an increase in the customer satisfaction variable of 0.374 .
4. The coefficient value of the application of technology applications is 0.029 , this value indicates that, if the application of technology applications increases by 1 unit, the strengthening of the customer satisfaction variable will increase by 0.029

**f. test**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	423.991	3	141.330	46.798	.000 <sup>b</sup>
	Residual	301.999	100	3.020		
	Total	725.990	103			

a. Dependent Variable: TOTALKP

b. Predictors: (Constant), TOTALAT, TOTALKCS, TOTALVP

**Figure 7**  
**F Test Results**

Source: Researcher with SPSS

F-Count value is 46,798 or > F-table 2,698 and significant level is 0.000 or <0.05. So it can be concluded that the variables of customer *service performance* , *product variations* , application of technology applications , together has an effect on the variable on customer satisfaction .

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.853	1.510		.565	.573		
	TOTALKCS	.078	.029	.290	2.657	.009	.350	2.856
	TOTALVP	.029	.084	.042	.348	.729	.285	3.509
	TOTALAT	.374	.089	.485	4.213	.000	.314	3.188

a. Dependent Variable: TOTALKP

**Figure 8**  
**T test**

Source: Researcher with SPSS

Based on the results of the T test (t-test) :

1. The result of the t - count of customer *service performance* is 2.657 or > t -table 1.985 with a significance of 0.000 or <0.005 , then H1 which is suspected that customer *service performance* affects customer satisfaction ( Y ) has been proven or accepted.
2. t result count v variation p product of 0.348 or < t - table 1.985 with a significance of 0.000 or <0.005 , then H3 which is suspected that product variations affect customer satisfaction (Y) is proven or accepted
3. The results of the t - count of the application of technology applications are 4.213 or < t -table 1.985 with a significance of 0.000 or <0.005 , then the hypothesis H 3 which is suspected that the application of technology applications affects customer satisfaction ( Y ) is proven or accepted if tested Partial.



4. It is known that the value of standardized coefficients in the application of technology applications is higher than that of *customer service* , and *variations* product , then the application of technology applications \_ have the biggest influence

## CONCLUSION

Conclusion in study this : (1) *customer service* performance variables take effect to satisfaction customer on the Livin'by Mandiri product and it is difficult to switch to another bank , (2) the higher the product variable, the customer satisfaction with the Livin'by Mandiri product will increase the variety of transactions that occur , (3) the higher the variable application of technology applications, the more customer satisfaction on Livin'by Mandiri products will be accessed for the purposes of business transactions and so on, (4) the higher the variables of customer service performance, application of technology applications, and product variations, customer satisfaction on Livin'by Mandiri Products will increase

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