

# Influencing Factors On BCA Mobile Customer Loyalty: Mediating Role Of Customer Satisfaction

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**Abstract:** Transactional activities have become embedded in humans' daily lives that innovation and renewal are needed to facilitate transaction activities and support business in the banking industry. In this digital era, advances in technology and information provide significant changes by providing convenience. E-banking is a strategic innovation considered effective in supporting banking sector. This study aimed to empirically examine the influence of reliability, privacy and security, and perceived value on BCA mobile customer loyalty in Jakarta, with customer satisfaction as a mediating variable. This research involved the sample of 321 respondents BCA mobile users in Jakarta using purposive sampling method. The collected data is analyzed using PLS-SEM method with SmartPLS 4 software. The findings indicate that reliability, privacy and security, and perceived value positively and significantly influence customer satisfaction and loyalty. Furthermore, customer satisfaction has a positive and significant influence on customer loyalty and also mediated the factors on customer loyalty.

**Keywords:** Reliability; Privacy and Security; Perceived Value; Customer Satisfaction; Customer Loyalty.

**Abstrak:** Aktivitas transaksional telah menjadi bagian integral dari kehidupan sehari-hari manusia sehingga inovasi dan pembaruan diperlukan untuk memfasilitasi kegiatan transaksi dan mendukung bisnis di industri perbankan. Di era digital ini, kemajuan teknologi dan informasi memberikan perubahan signifikan dengan menyediakan kemudahan. E-banking adalah inovasi strategis yang dianggap efektif dalam mendukung sektor perbankan. Penelitian ini bertujuan untuk menguji secara empiris pengaruh *reliability, privacy and security*, dan *perceived value* terhadap *customer loyalty* BCA mobile di Jakarta, dengan *customer satisfaction* sebagai variabel mediasi. Penelitian ini melibatkan sampel 321 responden pengguna BCA mobile di Jakarta menggunakan metode *purposive sampling*. Data kemudian dianalisis menggunakan metode PLS-SEM dengan *software* SmartPLS 4. Hasil menunjukkan bahwa *reliability, privacy and security*, dan *perceived value* berpengaruh positif dan signifikan terhadap *customer satisfaction* dan *customer loyalty*. Selain itu, *customer satisfaction* berpengaruh positif dan signifikan terhadap *customer loyalty* serta memediasi faktor-faktor tersebut pada *customer loyalty*.

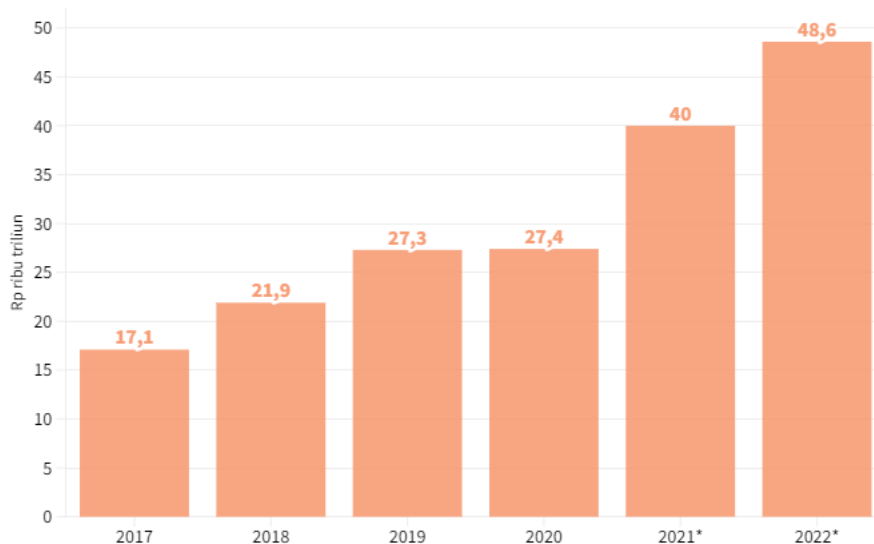
**Kata Kunci:** Reliability; Privacy and Security; Perceived Value; Customer Satisfaction; Customer Loyalty.

## INTRODUCTION

In daily life, humans are inseparable from transaction activities. In this regard, the presence of banks is necessary to support the smoothness of payment and transaction activities. The word "bank" itself comes from the Italian language, "*banca*" which means a place for exchanging money. Generally, a bank is a financial institution authorized to accept deposits from the public, provide loans, and issue promissory notes, which are other forms of currency (Kompas, 2022). According to Undang-undang No. 10 of 1998, a bank is an institution that works by collecting funds from the public in the form of savings and

redistributing them to the public through loans or other means to improve the standard of living.

Innovation and updates are needed to facilitate transaction activities and support efforts in the banking industry. In the digital era, technological and information advancements bring significant changes, where technology links information and business processes (Haq & Awan, 2020). Utilizing technological advancements in this digital era, the banking industry is expanding payment systems to be more convenient, such as activating digital transaction systems. E-banking is considered as a strategic innovation to support the banking sector. With e-banking, transactions can be conducted based on technology and information without being hindered by space and time. The value of digital banking transactions in Indonesia has consistently increased over the past 5 years (Data Indonesia, 2022). By 2022, transactions using digital banking reached Rp48,600 trillion, that increasing 21.880 percent from the previous year.



**Figure 1.** The Volume of Digital Banking Transactions in Indonesia  
 Source: Data Indonesia, 2022

Bank Central Asia or BCA is a private bank in Indonesia established on February 21,1957, by Soedono Salim (Bisnis Tempo, 2023) and recorded to have a total of 1,247 branch offices and 18,348 ATMs distributed throughout Indonesia (Detik Finance, 2022). BCA's products and services are used daily for financial transactions, including payments, savings, loans, and investments. BCA has also contributed to building online transaction payment methods by introducing mobile banking services in the digital era known as 'BCA mobile.'

BCA mobile has become a popular means of daily transactions. The service, provided as a smartphone application, makes payment methods more convenient. However, BCA mobile has been frequently experiencing disruptions since 2019 until these days. The issues often arise due to system updates that temporarily render BCA mobile inaccessible (Bisnis.com, 2019), making many customers unable to carry out digital transactions through the service (Kompas, 2022). The recurring incidents have led to numerous complaints from BCA customers. Another issue occurred in July 2023 when information circulated indicating the presence of a virus in the BCA mobile application.



The application's pop-ups could enable remote device control and deplete customers' account balances (Kominfo, 2023).

According to the Bank Service Excellence Monitor (BSEM) survey by Marketing Research Indonesia, BCA received the Infobank 18th Banking Service Excellence Awards 2021, rank the second position in the Best Mobile Banking category (Info Bank News, 2021). However, a subsequent survey conducted by MRI from late 2022 to March 2023 showed that Bank Mandiri secured the first position in the Best Mobile Banking category, followed by Bank BNI in second place (The Asian Post, 2023; Info Bank News, 2023). The survey suggests that the decrease in BCA's ranking may be caused by the weakened performance of BCA mobile services in the increasingly competitive banking landscape.

If this not appropriately addressed, persistent issues with the BCA mobile service can impact customer loyalty. Customers gauge a company's potential through the efficiency of its digital services (Raza et al., 2020). Therefore, BCA must maintain and enhance customer loyalty by delivering satisfying products and services. According to (Haq & Awan, 2020), variables influencing customer loyalty include reliability, website design, and customer satisfaction. (Shankar & Jebarajakirthy, 2019) and (Hamouda, 2019) suggest that variables like reliability, privacy and security, initial trust, and perceived value can impact customer loyalty.

This research adapts previous studies by (Haq & Awan, 2020) and (Hamouda, 2019). (Haq & Awan, 2020) examines the impact of reliability, privacy and security, website design, and customer service and support on customer loyalty, with customer satisfaction as a mediating variable. Their research found that privacy and security had a nonsignificant impact on customer loyalty. However, study by (Shankar & Jebarajakirthy, 2019) show a significant impact of privacy and security on customer loyalty. This difference impact of privacy and security on customer loyalty between these two studies creates an empirical gap for this research to reevaluate the influence of this variable. This research also adapts study by (Hamouda, 2019) on the impact of perceived value and integration quality on customer satisfaction and loyalty.

The novelty in this research is by adding exogenous variables of perceived value by adapting 2 previous studies as a reference, where research by (Haq & Awan, 2020) examined only the components of e-service quality as exogenous variables, including reliability and privacy and security, then the perceived value variable on satisfaction and loyalty as referred to in research by (Hamouda, 2019). This research was also conducted during the post-pandemic period in Jakarta area, where previous research was conducted during the pandemic. The novelty in this research aims to examine variables that influence satisfaction and loyalty more broadly. Also the time novelty aims to reexamine and to finds out the research results in the post-pandemic period in Jakarta area. Based on the presented background, the researcher is interested in investigating factors influencing satisfaction and their impact on the loyalty of BCA mobile users.

## **THEORITICAL REVIEW**

**The shift to loyalty strategies.** The occurrence of a shift from satisfaction towards loyalty is beneficial for the majority of companies. The higher the customer retention in a company, the more successful the company is in maintaining the attachment and loyalty of its customers. It is proven that loyalty plays a significant role in obtaining and increasing profits in a company, so emphasis needs to be placed on achieving this. In this regard,



satisfaction plays a profound role in achieving loyalty. Companies must understand and provide things that satisfy customers, thereby contributing to loyalty.

**Expectation confirmation theory (ECT).** The expectation-confirmation theory (ECT) has an initial proportion that connects disconfirmed expectations, which subsequently leads to satisfaction. Essentially, satisfaction will increase along with the improvement in the expectation-performance ratio. Expectations are inherent and determining factors before achieving satisfaction. Expectations are expressed through the perspective generated in post-purchase evaluations. The process of confirming expectations passes through different perspectives in each perception. This is related to the performance of what the company provides and is also a comparative process that will lead customers to satisfaction decisions. In other words, expectations are part of the comparison process before consideration, ultimately resulting in satisfaction.

After satisfaction is formed based on the confirmation and expectation levels, it will eventually lead to the intention to repurchase. Conversely, if the confirmation and expectation levels result in dissatisfaction, consumers will discontinue product usage and will not proceed to the next process. Thus, the expectation and confirmation process will affect satisfaction, and satisfaction will, in turn, lead to repurchase.

**The perceived service quality component.** There are components of perceived service quality. In various types of services, consumers essentially use the same criteria to evaluate something. These criteria are divided into ten main categories called "service quality determinants" to describe and define service quality, that are: (1) Access; (2) Communication; (3) Competence; (4) Courtesy; (5) Credibility; (6) Reliability; (7) Responsiveness; (8) Security; (9) Tangibles; (9) Understanding/knowing the customer.

**Cognitive Motivational Relational Theory (CMR).** The Cognitive Motivational Relational Theory (CMR) connects the analyzing process with the emotional responses. Cognitive orientation is generated based on human evaluations of the environment. The resulting characteristics then indicate responses in the form of values, beliefs, and goals that significantly affect environmental events (Shankar & Jebarajakirthy, 2019). CMR is widely used to explain the relationship between service quality and customer responses, such as satisfaction and loyalty (Shankar & Jebarajakirthy, 2019; Sivapalan & Jebarajakirthy, 2017). Experts state that the emotional responses generated by customers are then expressed through reactions, including satisfaction and loyalty.

**Reliability.** The definition of reliability is the company's ability to deliver products and services with consistent, reliable, and accurate performance as promised, without any failures. Previous research indicates that reliability influences customer satisfaction and loyalty (Haq & Awan, 2020).

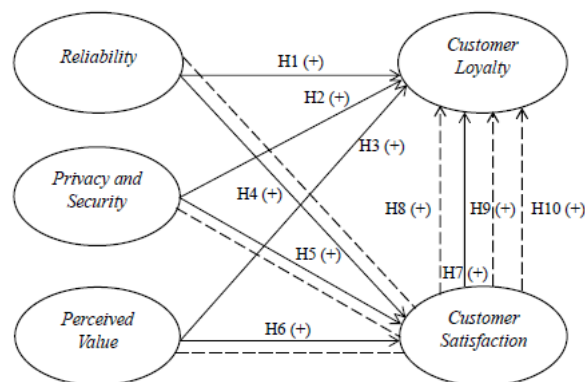
**Privacy and Security.** Privacy and security are customers' belief in a company's freedom from danger, risk, disruption, loss, and the assurance of consistently safeguarding personal information securely. Privacy and security significantly influence customer loyalty (Shankar & Jebarajakirthy, 2019) and customer satisfaction (Ayinaddis et al., 2023).

**Perceived Value.** (Schiffman & Wisenblit, 2019) declare perceived value as customers' view of the value they receive for their money relative to other options. The researcher concludes that perceived value is the overall assessment by customers through their perspective on the benefits or value obtained from a product or service compared to what is expended. Perceived value can increase customer satisfaction and loyalty (Jeong & Kim, 2020).



**Customer Satisfaction.** According to (Schiffman & Wisenbitt, 2019), customer satisfaction is the customer's perception of the performance of a product or service about customer expectations. The researcher concludes that customer satisfaction is the positive impression perceived by customers through their perception of the purchase and the performance of the product or service provided, which is deemed appropriate to meet customers' needs, wants, and expectations. A study by (Ayinaddis et al., 2023) states that customer satisfaction has a positive and significant influence on customer loyalty, suggesting that customer loyalty can be achieved through higher satisfaction levels (Haq & Awan, 2020).

**Customer Loyalty.** The definition of customer loyalty expressed by (Kartanegara & Keni, 2022) is the consumer's attitude toward a company, where the consumer has a tendency or intention to continue using products or services from the same company, simultaneously showing no interest in similar products offered by other companies. The researcher concludes that customer loyalty is the consumer's commitment to consistently use products or services from a particular company over a long period without intending to switch to another company. Therefore, **Figure 2** presents the research framework which shows the influence between variables and the resulting hypothesis.



**Figure 2.** The Conceptual Research Framework

**Hypothesis.** Based on the theories and the influences of the variables explained above, the hypotheses in this study are formulated as follows:

**H1:** Reliability has a positive and significant influence on customer loyalty BCA mobile in Jakarta.

**H2:** Privacy and security has a positive and significant influence on customer loyalty BCA mobile in Jakarta.

**H3:** Perceived value has a positive and significant influence on customer loyalty BCA mobile in Jakarta.

**H4:** Reliability has a positive and significant influence on customer satisfaction BCA mobile in Jakarta.

**H5:** Privacy and security has a positive and significant influence on customer satisfaction BCA mobile in Jakarta.

**H6:** Perceived value has a positive and significant influence on customer satisfaction BCA mobile in Jakarta.

**H7:** Customer satisfaction has a positive and significant influence on customer satisfaction BCA mobile in Jakarta.

**H8:** Reliability has a positive and significant influence on customer loyalty BCA mobile in Jakarta, mediated by customer satisfaction.

**H9:** Privacy and security has a positive and significant influence on customer loyalty BCA mobile in Jakarta, mediated by customer satisfaction.

**H10:** Perceived value has a positive and significant influence on customer loyalty BCA mobile in Jakarta, mediated by customer satisfaction.

## METHODS

The research design serves as an overall plan for the method used in collecting and analyzing data (Hair et al., 2021). The studied problem requires a broad approach and structured development through research design. This research employs a descriptive design, such as market characteristics or functions (Malhotra, 2020). Descriptive research collects quantitative data to answer research questions (Hair et al., 2021). The approach used in this study is a cross-sectional design, where information is collected only once from a specific sample within a predetermined time or period (Malhotra, 2020).

The population refers to the entire set of elements that share common characteristics as information for marketing research purposes (Malhotra, 2020). The population in this study is BCA customers who have conducted transactions using BCA mobile services and are domiciled in Jakarta. (Kotler & Armstrong, 2021) define a sample as a segment of the population selected in marketing research to represent the entire population. The sample is smaller than the population members and is used by the researcher to collect data (Hair et al., 2021). This research utilizes a non-probability sampling technique with purposive sampling method, where there are criteria for selecting samples based on needed assessments with good prospects to represent the population and obtain accurate information (Kotler & Armstrong, 2021). The sample criteria used in this study are individuals who have conducted transactions using BCA mobile services, are domiciled in Jakarta, and are 18 years old or older.

According to (Malhotra, 2020), the minimum sample size required in marketing research studies is 200 samples. Meanwhile, the minimum sample size required for data processing using the PLS-SEM method is 10 times the number of independent variables in the research model (Hair et al., 2022). This research has 4 independent variables, so the minimum sample required is 40 respondents. Another requirement is 10 times the number of arrows pointing to latent variables in the research model. In this study, there are 7 arrows pointing to the customer loyalty variable, so the minimum required sample is 70 respondents. A previous study by (Hamouda, 2019) used 395 respondents as the research sample. Referring to the experts mentioned above, the minimum sample size required for this study is 300 respondents.

This study employs a 5-point Likert scale with interval measurement, where the same numeric distance on the scale represents the same value in measuring characteristics (Bougie & Sekaran, 2020). In this research, there are three exogenous variables (reliability, privacy and security, and perceived value), one endogenous variable (customer loyalty), and one mediating variable (customer satisfaction), which will be used and explained.

## RESULTS

**Respondents' Socio-Demographic Profile.** The data collected in this research will be tested to meet the criteria of validity and reliability. This study employs data analysis techniques with the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method using SmartPLS 4 software. This method consists of two analyses: the outer model analysis to display the relationship between constructs and their indicator variables (Hair et al., 2022), which includes validity and reliability analysis, and inner model analysis. Out of the 337 respondents who participated in filling out the questionnaire, only the data of 321 respondents can be used and processed. Based on the data obtained, the profile of respondents participating in this study is as follows: primarily female, aged between 18 and 30 years old, students, with a monthly income below Rp3,500,000, and at the bachelor's degree (S1) education level. Respondent's socio-demographic profile can be seen in **Table 1** below.

**Table 1.** Respondents' Socio-Demographic Profile

Variables		N = 321	Percentage
Sex	Male	129	40.200
	Female	192	59.800
Age	18 to 30 years old	212	60
	31 to 40 years old	42	13.100
	41 to 50 years old	47	14.600
	51 years or older	20	6.200
Profession	Students	1	0.300
	College/university students	149	46.400
	Government employees	0	0
	Private sector employees	126	39.300
	Entrepreneurs	45	14
Monthly Earning	Less than Rp3.500.000	112	34.900
	Rp3.500.000 to Rp5.000.000	61	19
	Rp5.000.001 to Rp12.000.000	97	30.200
	More than Rp12.000.000	51	15.900
Education Level	High school	82	25.500
	Diploma	11	3.400
	Bachelor's degree	219	68.200
	Postgraduate or higher	9	2.800

Source: Data collection, processed by the authors

**Operationalization of Variables and Instruments.** This study utilizes 28 indicator items divided into 6 reliability indicators, 5 privacy and security indicators, 5 perceived value indicators, 6 customer satisfaction indicators, and 5 customer loyalty indicators. Questionnaire items and references can be seen in **Table 2** below. Based on the obtained results, most respondents state that they can view transaction details in their account through BCA mobile, feel secure when conducting transactions through BCA mobile, and affirm that BCA mobile provides speed and convenience. Additionally, most respondents express that BCA mobile is easy to use and consider it to be their first choice in utilizing banking services.

**Table 2. Questionnaire Items and References**

Variables	Codes	Questionnaire Items	References
Reliability	REL1	Mobile banking delivers service performance as promised.	(Haq & Awan, 2020); (Tetteh & Boachie, 2021); (Raza et al., 2020); (Aslam et al., 2019)
	REL2	Mobile banking provides services promptly.	
	REL3	I can view transaction details in my account through mobile banking.	
	REL4	Mobile banking consistently displays accurate information.	
	REL5	Mobile banking provides feedback that meets my needs.	
	REL6	Mobile banking offers error-free services.	
	REL7	Mobile banking delivers consistent services.	
Privacy and Security	PRIV1	Mobile banking protects my personal information.	(Haq & Awan, 2020); (Aslam et al., 2019)
	PRIV2	Mobile banking safeguards my financial information.	
	PRIV3	I feel secure when conducting transactions through this mobile banking service.	
	PRIV4	The confidentiality of my data is safe when using mobile banking services.	
	PRIV5	I trust that this mobile banking service will not misuse my personal information.	
Perceived Value	PERV1	Mobile banking services provide beneficial value to its customers.	(Hamouda, 2019); (Abror et al., 2022)
	PERV2	Mobile banking offers value that is commensurate with its cost.	
	PERV3	Utilizing this mobile banking is an efficient way to manage my time.	
	PERV4	Mobile banking provides speed and convenience in transactions.	
	PERV5	Using mobile banking services brings advantages to me.	
Customer Satisfaction	SAT1	I am happy to use mobile banking services.	(Haq & Awan, 2020); (Hamouda, 2019); (Aslam et al., 2019); (Abror et al., 2022)
	SAT2	I am satisfied with the overall mobile banking services.	
	SAT3	Mobile banking is easy to use.	
	SAT4	Using this mobile banking service is the right choice for me.	
	SAT5	Mobile banking provides the services I need.	
	SAT6	Mobile banking delivers services that meet my expectations.	
Customer Loyalty	LOY1	I would recommend this mobile banking to someone who seeks my opinion.	(Haq & Awan, 2020); (Hamouda, 2019); (Aslam et al., 2019)
	LOY2	I prefer this mobile banking over other mobile banking options.	
	LOY3	I will convey positive things about this mobile banking to others.	
	LOY4	I will continue to use mobile banking services.	
	LOY5	This mobile banking is my first choice in utilizing banking services.	

**Outer Model Analysis.** The obtained sample data is then processed to undergo the outer model and inner model analysis. The outer model analysis comprises validity and reliability analyses. Subsequently, the validity analysis in PLS-SEM is divided into convergent validity and discriminant validity. Based on the results of the convergent validity and reliability testing presented in **Table 3**, each indicator has met the loading





factor value above 0.708 after eliminating the REL6 indicator. It also produced AVE values above 0.500 (Hair et al., 2022). All indicators can be considered reliable through reliability analysis as they obtained Cronbach's alpha values above 0.600 and composite reliability values above 0.700 (Hair et al., 2022).

**Table 3.** Convergent Validity and Reliability Analysis

Item	Factor Loading	AVE	Cronbach's Alpha	Composite Reliability
LOY1	0.823	0.673	0.878	0.911
LOY2	0.815			
LOY3	0.808			
LOY4	0.805			
LOY5	0.849			
PERV1	0.860	0.713	0.899	0.926
PERV2	0.829			
PERV3	0.876			
PERV4	0.835			
PERV5	0.821			
PRIV1	0.799	0.707	0.896	0.923
PRIV2	0.850			
PRIV3	0.806			
PRIV4	0.879			
PRIV5	0.869			
REL1	0.728	0.586	0.859	0.895
REL2	0.744			
REL3	0.761			
REL4	0.757			
REL5	0.788			
REL7	0.814			
SAT1	0.831			
SAT2	0.828			
SAT3	0.831			
SAT4	0.876			
SAT5	0.846			
SAT6	0.839			

Source: Processed by Smart PLS 4

The discriminant validity assessment relies on several criteria, namely the Fornell-Larcker criterion, where the square root of the AVE for each construct should be greater than the highest correlation with other constructs. Additionally, the heterotrait-monotrait ratio (HTMT) should have values lower than 0.85. Moreover, cross-loading assessments indicate that related constructs should have higher values than cross constructs (Hair et al., 2022).

**Table 4.** Discriminant Validity with Fornell-Larcker Criterion Approach

	LOY	PERV	PRIV	REL	SAT
LOY	0.820				
PERV	0.756	0.845			
PRIV	0.659	0.682	0.841		
REL	0.722	0.724	0.638	0.766	
SAT	0.764	0.767	0.638	0.715	0.842

Source: Processed by Smart PLS 4

**Table 4** shows the results of discriminant validity with Fornell-Larcker criterion approach.

**Table 5.** Discriminant Validity with Heterotrait-Monotrait Ratio (HTMT) Approach

	LOY	PERV	PRIV	REL	SAT
LOY					
PERV	0.848				
PRIV	0.740	0.755			
REL	0.827	0.822	0.724		
SAT	0.848	0.843	0.698	0.805	

Source: Processed by Smart PLS 4

**Table 5** shows the results of discriminant validity with Heterotrait-monotrait ratio (HTMT) approach.

**Table 6.** Discriminant Validity with Cross-Loadings Approach

	LOY	PERV	PRIV	REL	SAT
LOY1	0.823	0.620	0.564	0.631	0.645
LOY2	0.815	0.582	0.514	0.577	0.566
LOY3	0.808	0.587	0.571	0.534	0.581
LOY4	0.805	0.630	0.481	0.562	0.661
LOY5	0.849	0.675	0.569	0.649	0.671
PERV1	0.647	0.860	0.620	0.628	0.663
PERV2	0.674	0.829	0.617	0.620	0.654
PERV3	0.611	0.876	0.574	0.604	0.657
PERV4	0.616	0.835	0.526	0.630	0.616
PERV5	0.642	0.821	0.537	0.575	0.647
PRIV1	0.496	0.498	0.799	0.494	0.429
PRIV2	0.556	0.601	0.850	0.546	0.583
PRIV3	0.586	0.576	0.806	0.504	0.552
PRIV4	0.578	0.602	0.879	0.589	0.592
PRIV5	0.543	0.579	0.869	0.544	0.507
REL1	0.533	0.523	0.458	0.728	0.535
REL2	0.499	0.501	0.429	0.744	0.522
REL3	0.516	0.520	0.477	0.761	0.555
REL4	0.582	0.566	0.485	0.757	0.541
REL5	0.577	0.558	0.482	0.788	0.539
REL7	0.602	0.647	0.589	0.814	0.592
SAT1	0.627	0.640	0.531	0.602	0.831
SAT2	0.629	0.622	0.549	0.552	0.828
SAT3	0.631	0.611	0.516	0.581	0.831
SAT4	0.685	0.675	0.568	0.627	0.876
SAT5	0.620	0.638	0.501	0.603	0.846
SAT6	0.663	0.685	0.556	0.645	0.839

Source: Processed by Smart PLS 4

**Table 6** shows the results of discriminant validity with cross-loadings approach. Based on the results presented, all indicators in this variable meet the validity criteria.

**Inner Model Analysis.** In the multicollinearity test, the criterion for VIF values is below 5, indicating that the indicators in the study are not correlated with each other. Based on the results of the multicollinearity test presented in **Table 7**, it can be concluded that all

indicators of variables in this study are not correlated because they have VIF values below 5.

**Table 7.** VIF,  $f^2$ , Path Coefficient, and P-Value Analysis

	VIF	$f^2$	Path Coefficient	P-Values
PERV→LOY	3.147	0.068	0.257	0.001
PERV→SAT	2.537	0.241	0.461	0.000
PRIV→LOY	2.089	0.030	0.139	0.003
PRIV→SAT	2.036	0.026	0.136	0.006
REL→LOY	2.539	0.059	0.215	0.000
REL→SAT	2.290	0.109	0.295	0.000
SAT→LOY	2.867	0.117	0.323	0.000
PERV→SAT→LOY			0.149	0.000
REL→SAT→LOY			0.095	0.001
PRIV→SAT→LOY			0.044	0.019

Source: Processed by Smart PLS 4

The Inner model analysis explains how constructs are related to each other based on theory and logic (Hair et al., 2022). Based on the results of the effect size ( $f^2$ ) test, the variables perceived value, privacy and security, reliability, and customer satisfaction have a small effect on customer loyalty, with  $f^2$  values between 0.020 and 0.150. Similarly, the variables privacy and security and reliability have  $f^2$  values between 0.020 and 0.150, resulting in a small effect on the variable customer satisfaction. Meanwhile, the variable perceived value has a moderate effect on customer satisfaction with  $f^2$  values between 0.150 and 0.350.

Hypothesis testing is analyzed with path coefficients and p-values using the PLS algorithm and bootstrapping. Path coefficient values range from -1 to +1, where values approaching these extremes indicate a stronger direction. The analysis of p-values will determine the influence between variables and indicate whether the hypotheses are accepted or rejected. In studies with a significance level of 5 percent, the p-value should be below 0.050 for the relationship to be tested significantly (Hair et al., 2022).

The results of the path coefficient test show all positive values. It can be concluded that the variables perceived value, privacy and security, and reliability positively influence customer loyalty and customer satisfaction. Also, the variable customer satisfaction has a positive effect on customer loyalty. The variable with the most significant impact on the increase or decrease of customer loyalty is the customer satisfaction variable, at 0.323. Meanwhile, the variable with the most significant effect on the increase or decrease of customer satisfaction is the perceived value variable with a value of 0.461. In testing indirect relationships (mediation), perceived value, reliability, and privacy and security positively affect customer loyalty mediated by customer satisfaction. The variable customer satisfaction has the most significant mediating effect on the customer loyalty variable in its relationship with the perceived value variable, at 0.149. **Table 7** also shows the results of p-value testing, where all the effects between variables produce p-values below 0.050. Therefore, it can be concluded that all hypotheses in this study are supported.

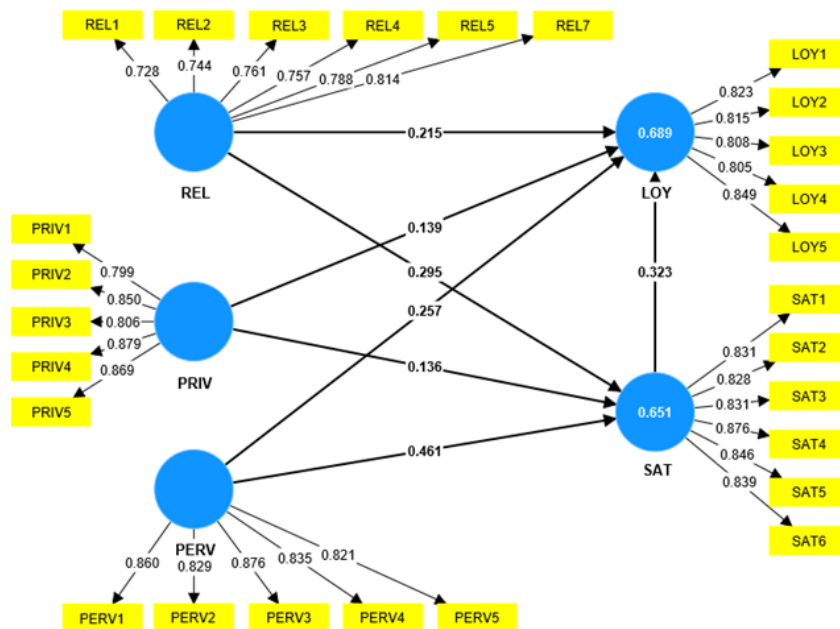
**Table 8.** R<sup>2</sup> and Q<sup>2</sup> Analysis

	R <sup>2</sup>	Q <sup>2</sup>
LOY	0.689	0.638
SAT	0.651	0.638

Source: Processed by Smart PLS 4

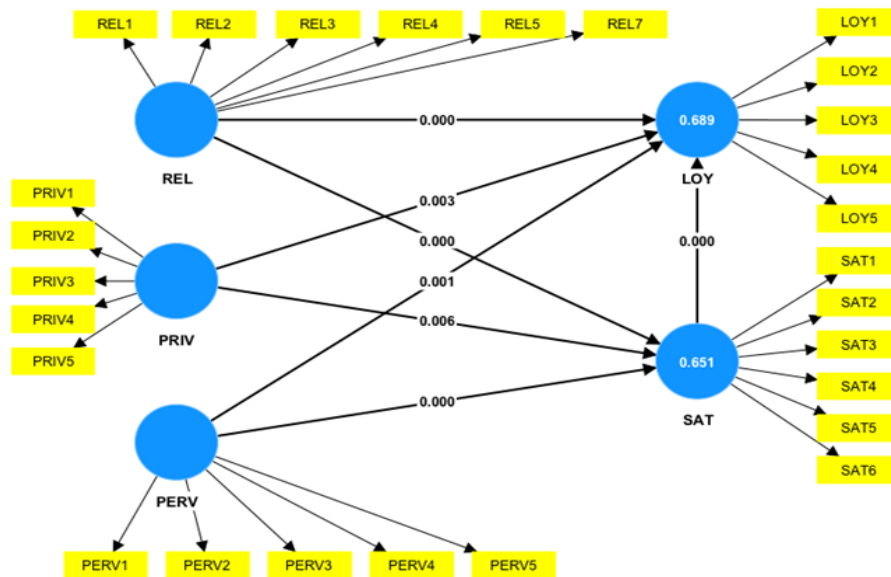
The coefficient of determination (R<sup>2</sup>) test ranges from 0 to 1, indicating that the higher the R<sup>2</sup> value, the stronger the variable's explanatory power in the study (Hair et al., 2022). In **Table 8**, customer loyalty produces an R<sup>2</sup> value of 0.689, and customer satisfaction delivers an R<sup>2</sup> value of 0.651, indicating that the variables in this study have a moderate influence in explaining the variables customer loyalty and customer satisfaction at 68.900 percent and 65.100 percent, respectively.

The Predictive relevance (Q<sup>2</sup>) test uses blindfolding, where a value greater than 0 indicates that the model performs well in the study's benchmark (Hair et al., 2022). The Q<sup>2</sup> values obtained for customer loyalty and customer satisfaction are 0.638, indicating that the variables in this study can explain the model well as they have Q<sup>2</sup> values greater than 0.



**Figure 3.** PLS-SEM Algorithm Result

The results of path coefficient analysis were processed using the PLS algorithm method to determine the influence between variables which can be seen in **Figure 3** above.



**Figure 4.** Bootstrapping Result

The results of significance analysis were processed using the bootstrapping method which can be seen in **Figure 4** above.

## DISCUSSION

The results of the first hypothesis (H1) testing indicate that the influence of reliability on customer loyalty produces a path coefficient value of 0.215 and a p-value of 0.000. Therefore, H1 is accepted, meaning that reliability positively and significantly impacts customer loyalty for BCA mobile users in Jakarta. These findings align with previous research conducted by (Shankar & Jebarajakirthy, 2019), (Abd-Elrahman, 2023), and (Izogo, 2017), demonstrating that reliability positively and significantly influences customer loyalty.

Companies must be reliable by consistently delivering products and services accurately and as promised. This reliability can enhance customer attachment to the company, fostering continued commitment without the intention of switching to another company.

The results of the second hypothesis (H2) testing indicate that the influence of privacy and security on customer loyalty produces a path coefficient value of 0.139 and a p-value of 0.003. H2 is accepted, indicating that privacy and security positively and significantly impact customer loyalty for BCA mobile users in Jakarta. These results are consistent with previous research by (Karim et al., 2023), and (Indrasari et al., 2022), highlighting the positive and significant influence of privacy and security on customer loyalty.

Companies must instill confidence in customers to be free from dangers, risks, disruptions, and losses related to their products or services. Ensuring the security of customer information contributes to increased customer attachment to the company, with customers remaining committed without the intention of switching to another company.

The results of the third hypothesis (H3) testing indicate that the influence of perceived value on customer loyalty produces a path coefficient value of 0.257 and a p-

value of 0.001. H3 is accepted, meaning that perceived value positively and significantly impacts customer loyalty for BCA mobile users in Jakarta. These findings align with previous research by (Kartanegara & Keni, 2022) and (Jeong & Kim, 2020), emphasizing the positive and significant influence of perceived value on customer loyalty.

Suppose customers feel that the value of a company's products or services exceeds their pay. In that case, it contributes to increased customer attachment to the company, fostering commitment without the intention of switching to another company.

The results of the fourth hypothesis (H4) testing indicate that the influence of reliability on customer satisfaction produces a path coefficient value of 0.295 and a p-value of 0.000. H4 is accepted, meaning that reliability positively and significantly impacts customer satisfaction for BCA mobile users in Jakarta. These results are consistent with previous research by (Ayinaddis et al., 2023), (Raza et al., 2020), and (Tetteh & Boachie, 2021), demonstrating the positive and significant influence of reliability on customer satisfaction.

Companies must be reliable by consistently delivering products and services accurately and as promised. This creates positive impressions, resulting in customer satisfaction as the company is perceived to meet customers' needs, desires, and expectations.

The results of the fifth hypothesis (H5) testing indicate that the influence of privacy and security on customer satisfaction produces a path coefficient value of 0.136 and a p-value of 0.006. H5 is accepted, indicating that privacy and security positively and significantly impact customer satisfaction for BCA mobile users in Jakarta. These results align with previous research by (Yum & Yoo, 2023) and (Aslam et al., 2019), emphasizing the positive and significant influence of privacy and security on customer satisfaction.

Companies must instill confidence in customers to be free from dangers, risks, disruptions, and losses related to their products or services. Ensuring the security of customer information contributes to positive impressions and customer satisfaction, as the company is perceived to meet customers' needs, desires, and expectations.

The results of the sixth hypothesis (H6) testing indicate that the influence of perceived value on customer satisfaction produces a path coefficient value of 0.461 and a p-value of 0.000. H6 is accepted, meaning that perceived value positively and significantly impacts customer satisfaction for BCA mobile users in Jakarta. These findings align with previous research by Abror, (Patrisia et al., 2022), (Marcos & Coelho, 2022), and (Devi & Yasa, 2023), emphasizing the positive and significant influence of perceived value on customer satisfaction.

If customers feel that the value obtained from a company's products or services exceeds what they pay, it creates positive impressions and results in customer satisfaction. Customers perceive the company as meeting their needs, desires, and expectations.

The results of the seventh hypothesis (H7) testing indicate that the influence of customer satisfaction on customer loyalty produces a path coefficient value of 0.323 and a p-value of 0.000. H7 is accepted, meaning that customer satisfaction positively and significantly impacts customer loyalty for BCA mobile users in Jakarta. These findings align with previous research by (Mang'unyi et al., 2018), emphasizing the positive and significant influence of customer satisfaction on customer loyalty.

When customers experience positive impressions and satisfaction with a company's products or services, perceiving that their needs, desires, and expectations are met, it



increases customer attachment to the company. Customers remain committed without the intention of switching to another company.

The results of the eighth hypothesis (H8) testing indicate that the influence of reliability on customer loyalty, mediated by customer satisfaction, produces a path coefficient value of 0.095 and a p-value of 0.001. H8 is accepted, meaning that reliability has a positive and significant impact on customer loyalty mediated by customer satisfaction for BCA mobile users in Jakarta. The results obtained in this study are align with previous research conducted by (Teeroovengadam, 2022) and (Haq & Awan, 2020), which indicate that reliability has a positive and significant influence on customer loyalty mediated by customer satisfaction.

Companies must be reliable by consistently delivering products and services reliably and accurately as promised. This can create a positive impression for customers and generate satisfaction because the company is perceived to meet customers' needs, desires, and expectations. Consequently, this can increase customer attachment to the company, leading customers to remain committed without switching to another company.

The results of the ninth hypothesis (H9) testing indicate that the influence of privacy and security on customer loyalty, mediated by customer satisfaction, produces a path coefficient value of 0.044 and a p-value of 0.019. Therefore, H9 is accepted, meaning that privacy and security positively and significantly impact customer loyalty for BCA mobile users in Jakarta, mediated by customer satisfaction. These results align with previous research conducted by (Fatima et al., 2021), and (Haq & Awan, 2020), demonstrating that privacy and security have a positive and significant influence on customer loyalty mediated by customer satisfaction.

Companies must instill confidence in customers to be free from dangers, risks, disruptions, and losses related to their products or services. Ensuring the security of customer information can create a positive impression, resulting in customer satisfaction. This, in turn, can contribute to increased customer attachment to the company, with customers remaining committed without the intention of switching to another company.

The results of the tenth hypothesis (H10) testing indicate that the influence of perceived value on customer loyalty, mediated by customer satisfaction, produces a path coefficient value of 0.149 and a p-value of 0.000. Therefore, H10 is accepted, meaning that perceived value positively and significantly impacts customer loyalty for BCA mobile users in Jakarta, mediated by customer satisfaction. These findings align with previous research conducted by (Keshavarz & Jamshidi, 2018), Khawaja, Ali, and Mostapha (2021), and (Khasbulloh & Suparna, 2022), demonstrating that perceived value has a positive and significant influence on customer loyalty mediated by customer satisfaction.

If customers feel that the value obtained from a company's products or services exceeds what they pay, it creates a positive impression and generates satisfaction. Customers will perceive the company as capable of meeting their needs, desires, and expectations, which can increase customer attachment to the company. Customers are likely to remain committed without switching to another company.

The results of this study state that all hypotheses are accepted, and also answer the empirical gap in the research, where previous research by (Haq & Awan, 2020) stated the results that privacy and security variables had no effect on customer loyalty. Meanwhile, this research proves that H2 is supported, that privacy and security positively and significantly impacts BCA Mobile customer loyalty in Jakarta. The research results answer the different situation, that the research was conducted in the post-pandemic period.



Meanwhile, (Haq & Awan, 2020) research was carried out during the pandemic, which may have resulted in differences in the research results.

The results of this research can be implemented by related parties, namely BCA, by looking at the data obtained for each indicator. (1) BCA can increase the BCA mobile value offering that is balanced with the costs so that customers will feel satisfied when using BCA mobile services and also increase customer loyalty (mean of PERV2 equals to 4.2181 and loading factor 0.829, resulting a total value of 3.496). (2) BCA can improve overall BCA mobile services so that it can increase customer loyalty towards BCA mobile services (mean of SAT2 equals to 4.336 and loading factor 0.828, resulting a total value of 3.590). (3) BCA can improve BCA mobile services in accordance with promises such as practical, comfortable and easy transactions with complete features so that customers can feel satisfied when using BCA mobile services and can have an influence on increasing customer loyalty (mean of REL1 equals to 4.532 and loading factor 0.728, resulting a total value of 3.299). (4) BCA can increase the protection of customers' personal information when using BCA mobile services, such as personal data in documents: KTP, KK, or NPWP so that customers can feel satisfied when using BCA mobile services and can have an influence on increasing customer loyalty (mean of PRIV1 equals to 4.246 and loading factor 0.799, resulting a total value of 3.392).

The pros of this study is that reexamine previous research with different findings, as well as adding other variables outside of e-service quality, namely perceived value, so that the research reach is wider. This research was also conducted in the post-pandemic period so it aims to reevaluate the influence of the variables used on customer satisfaction and loyalty. The shortcomings of this research are that it only focuses on satisfaction and loyalty, the scope is only in Jakarta, only involves 321 respondents, and the test is only carried out once at a time.

## CONCLUSION

This study concludes that: (1) Reliability has a positive and significant impact on customer loyalty for BCA mobile users in Jakarta ( $\beta$  equals to 0.215 and p-value equals to 0.000). (2) Privacy and security have a positive and significant impact on customer loyalty for BCA mobile users in Jakarta ( $\beta$  equals to 0.139 and p-value equals to 0.003). (3) Perceived value has a positive and significant impact on customer loyalty for BCA mobile users in Jakarta ( $\beta$  equals to 0.257 and p-value equals to 0.001). (4) Reliability has a positive and significant impact on customer satisfaction for BCA mobile users in Jakarta ( $\beta$  equals to 0.295 and p-value equals to 0.000). (5) Privacy and security have a positive and significant impact on customer satisfaction for BCA mobile users in Jakarta ( $\beta$  equals to 0.136 and p-value equals to 0.006). (6) Perceived value has a positive and significant impact on customer satisfaction for BCA mobile users in Jakarta ( $\beta$  equals to 0.461 and p-value equals to 0.000). (7) Customer satisfaction has a positive and significant impact on customer loyalty for BCA mobile users in Jakarta ( $\beta$  equals to 0.323 and p-value equals to 0.000). (8) Reliability has a positive and significant impact on customer loyalty for BCA mobile users in Jakarta, mediated by customer satisfaction ( $\beta$  equals to 0.095 and p-value equals to 0.001). (9) Privacy and security have a positive and significant impact on customer loyalty for BCA mobile users in Jakarta, mediated by customer satisfaction ( $\beta$  equals to 0.044 and p-value equals to 0.019). (10) Perceived value has a positive and



significant impact on customer loyalty for BCA mobile users in Jakarta, mediated by customer satisfaction ( $\beta$  equals to 0.149 and p-value equals to 0.000).

Regarding to the result obtained, this study still has some limitations. First, the variables used in this study are limited to only 5 variables: 3 exogenous variables, (reliability, privacy and security, and perceived value), 1 endogenous variable (customer loyalty), and 1 mediating variable (customer satisfaction). For future researchers, it is recommended to expand the research by adding other variables beyond this study, such as integration quality (Hamouda, 2019), customer engagement (Kertanegara & Keni, 2022), and initial trust (Shankar & Jebarajakirthy, 2019). Second, the scope of this study is limited to the Jakarta region, focusing solely on BCA customers who have conducted transactions using BCA mobile services and are domiciled in Jakarta. For future researchers, it is suggested to broaden the scope of the study not only in Jakarta but also in other cities such as Bogor, Tangerang, Bandung, and Surabaya to obtain more comprehensive research results. Third, the sample size in this study involves only 321 respondents due to time constraints, resulting in a less comprehensive sample size that is smaller than in major journal studies. For future researchers, it is recommended to increase the sample size beyond 321 respondents to obtain more accurate results. Lastly, findings and implications in this study are conducted with a cross-sectional research design, where data collection is performed only once within a specific time frame. For future researchers, it is advised to conduct research with a longitudinal study to demonstrate and clarify the effects produced in temporal changes.

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