THE IMPACT OF USER EXPERIENCE AND CUSTOMER SATISFACTION ON CUSTOMER LOYALTY IN BCA MOBILE BANKING

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Abstrak

Penelitian ini mengkaji hubungan antara pengalaman pengguna dengan dampaknya terhadap kepuasan dan loyalitas pelanggan dalam konteks BCA Mobile. Kajian ini menjelaskan pengaruh langsung dan tidak langsung dari pengalaman pengguna terhadap loyalitas pelanggan, dengan kepuasan pelanggan sebagai faktor mediasi yang krusial. Pendekatan penelitian kuantitatif digunakan dengan mengumpulkan data dari 161 partisipan yang memenuhi kriteria melalui kuesioner terstandar menggunakan skala Likert 4 poin. Hasil menunjukkan bahwa pengalaman pengguna memberikan pengaruh yang signifikan terhadap kepuasan dan loyalitas pelanggan. Selain itu, kepuasan pelanggan terbukti memiliki pengaruh positif langsung terhadap loyalitas serta berperan penting sebagai mediator antara pengalaman pengguna dan loyalitas. Temuan ini menekankan pentingnya meningkatkan kepuasan pelanggan untuk memperkuat loyalitas. Penelitian ini juga menunjukkan bahwa peningkatan pengalaman pengguna merupakan strategi yang efektif untuk mendorong keterlibatan dan retensi pelanggan di tengah persaingan layanan mobile banking yang kompetitif..

Kata kunci : *Pengalaman Pengguna, Kepuasan Pelanggan, Loyalitas Pelanggan, BCA Mobile, SEM-PLS*

Abstract

This research examines the relationship between user experience and its effect on customer satisfaction and loyalty in the context of BCA Mobile. The examination outlines the direct and indirect impacts of user experience on customer loyalty, with customer satisfaction serving as a crucial mediating factor. A quantitative research approach was utilized, collecting data from 161 qualified participants through a standardized questionnaire that used a 4-point Likert scale. The results demonstrate that user experience had a considerable impact on customer satisfaction and customer loyalty. Additionally, it was determined that customer satisfaction has a direct positive effect on loyalty and also plays a crucial mediating role between user experience and loyalty. These results emphasize the essential importance of improving customer satisfaction to boost customer loyalty. The findings indicate that enhancing user experience is a strategic method to boost customer engagement and retention amid the competitive environment of mobile banking services.

Keywords: User Experience, Customer Satisfaction, Customer Loyalty, BCA Mobile, SEM-PLS

1. PRELIMINARY

Advancements in information technology have empowered financial institutions to revolutionize the ways they offer service to their customers [1]. As the banking industry continues to evolve and faces increasing competition, this has put pressure on banks to adopt more advanced service delivery channels to provide greater value to their customers [2]. The growing use of new information and communication technologies led to the emergence of mobile banking in banks around the world starting in the 1990s [3]. The rise of mobile payment technology has become a key focus area, as it offers significant convenience and efficiency for both businesses and consumers [4]. The

transition to mobile-focused services is no longer just a choice for traditional banks; it has become a crucial path for them to maintain and strengthen their competitiveness in today's financial industry [5].

In Indonesia, mobile banking usage continues to grow significantly which is proven by performance report of digital banking transactions by Bank Indonesia, it shows annual growth increase of 17.19 percent as of January 2024 [6]. Mobile banking in Indonesia started in 2011 by Bank Central Asia (BCA) with m-BCA services which other major banks later followed [7]. BCA introduced its mobile banking service, BCA Mobile, which offers two main features: m-BCA for mobile banking transactions and KlikBCA, which serves as its internet banking platform. In 2021, BCA expanded its digital banking offerings with the launch of a new application called myBCA. According to EVP of Transaction Banking Business Development at BCA, myBCA enhances user experience by offering additional capabilities while maintaining BCA Mobile for users who prefer a gradual transition. BCA's decision to keep both applications demonstrates their commitment to enhance user experience, allowing users to adapt naturally without being forced into immediate changes.

As of January 2024, BCA's combined mobile banking services, both BCA Mobile and myBCA, have reached a total of 30.3 million users. Out of this, 3.2 million users are exclusively using myBCA [8]. This highlight the growing adoption of BCA's digital platforms, with myBCA gradually attracting a dedicated user base while BCA Mobile continues to be the primary platform for many customers. These initiatives can be seen as part of BCA's ongoing efforts to enhance customer satisfaction and ensure a seamless user experience on their platform. BCA's strategy to foster customer loyalty towards BCA Mobile is part of their broader efforts to ensure sustainability of their mobile banking services [9], as evidenced by their recognition in 2023 with the "Satisfaction, Loyalty, & Engagement Awards 2023" [10].

Customer loyalty is essential to a bank's success, as it plays a key role in driving business growth and sustainability [11]. Customer satisfaction plays a significant role in shaping customer loyalty [12] as it can be used as an indicator to measure customer loyalty. Customer satisfaction is defined as a comprehensive assessment that reflects the entire experience of interacting with and using a product or service over time [13]. To significantly enhance customer loyalty, management can assess it through customer satisfaction surveys [14]. User Experience (UX) is a vital element in the app sector, as a positive experience, driven by ease of use, personalization, and interactivity, greatly enhances customer satisfaction [13].

Previous studies [15] on BCA Mobile focused on customer satisfaction and its impact on customer loyalty, but there remains a significant gap in understanding how user experience may influences these outcomes. Another study [16], research the relation of customer experience, trust and satisfaction to customer loyalty. The findings highlighted customer satisfaction as the most significant factor driving loyalty, while customer experience alone was insufficient to retain users. However, the study did not investigate how user experience that could directly affect customer loyalty, leaving a gap in understanding whether the app-focused user experience aspects could play a significant role in building customer loyalty. A relevant study by [17] finds that user experience has a positive effect on customer satisfaction, but the relationship between user experience and loyalty was less prominent. The study demonstrates that aspect of customer experience plays a key role in enhancing satisfaction, which directly supports building customer loyalty. Furthermore, the study highlights that customer satisfaction serves as a crucial mediator in the relationship between user experience and customer loyalty. However, this study gap is only focused on e-commerce applications. By combining these concepts, this study will fill this knowledge gap.

User Experience is crucial for the success of applications, that differs from customer experience in terms of its focus on interaction and usability. Research on BCA Mobile [18] found that improvements in user experience positively influence user satisfaction. Given this connection, this study investigates how user experience aspects in BCA Mobile impact both customer satisfaction and loyalty. Because customer loyalty is important to maintain BCA's position to compete in the banking industry. By using User Experience dimensions, Value, Adoptability, Desirability and Usability, this study aims to exploring how these UX aspects within BCA Mobile impact customer satisfaction and loyalty and offering insights on how it contributes to strengthening loyalty among BCA Mobile users,

particularly those from the Millennial and Generation Z cohorts. The findings are expected as input to maintain and improve user experience, customer satisfaction, and customer loyalty.

Based on the description above, the following hypotheses and research model can be formulated:

• H1 = Customer satisfaction has a positive effect on customer loyalty.
• H2 = User experience has a positive effect on customer satisfaction.
• H3 = User experience has a positive effect on customer loyalty.
• H4 = User experience has a positive effect on customer loyalty mediated by customer satisfaction.
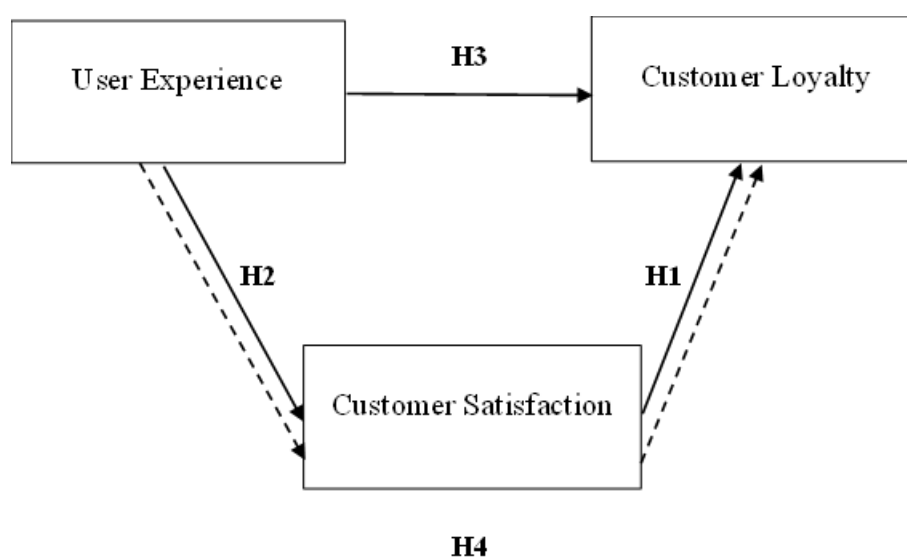

Figure 2. Research Framework

2. RESEARCH METHODS

This study utilized a qualitative research methodology in the form of a questionnaire. The questionnaire was distributed to users of the BCA Mobile application to investigate the factors that drive their loyalty towards the mobile banking application, specifically examining the roles of customer satisfaction and user experience. This study used Nonprobability sampling, specifically purposive sampling, to select the respondents. Research samples will focus on Generation Z and Millennials (aged 20-40) that are actively using BCA Mobile. The reason for targeting these generational cohorts is because they represent the largest and fastest growing segments of mobile banking users in Indonesia [19]. Recognizing these cohorts receive the most exposure of new technologies.

In this study, inverse square root approach is used to determine the minimum number of participants required for reliable results. According to Kock and Hadaya's study [20], the reasonable minimum sample size based on the inverse square root method if the path coefficient is unspecified yet is 160. The survey instrument was divided into three main variables: 1) User Experience, 2) Customer Satisfaction, and 3) Customer Loyalty. The research utilized 4-point closed-ended Likert scale for survey responses, which were collected through Google Forms, which served as the primary data source.

The approach taken for analysis is Partial Least Squares Structural Equation Modelling (PLS-SEM), which is well-suited for intricate models involving multiple constructs and variables. This method facilitates the investigation of latent variables like User Experience, Customer Satisfaction, and Customer Loyalty, while also modeling both direct and indirect relationships among these

constructs. Measurement of user experience using theory of Frank Guo's which used 4 variables, namely Value (the product's utility), Adoptability (ease of starting use), Desirability (how fun and engaging the experience is), and Usability (ease of task completion) [21]. Indicators of customer satisfaction used as key to understanding the overall experience, while indicator of customer loyalty, such as recommendation and continued use, were employed as strong indicator of loyalty.

Each variable were measured using several construct, which are described in the following table.

Table 1. Variable Measurement Indicators

Variables	Construct	Indicator	Source
User Experience (X1)	Value	UX1: The features of BCA Mobile banking app are well-integrated and work smoothly.	[22]
		UX2: BCA Mobile banking app meets all my banking needs efficiently.	
	Adoptability	UX3: BCA Mobile banking app is easy to find and install from the app store/play store.	
		UX4: I can quickly connect with my bank and perform transactions using BCA Mobile banking app.	
	Desirability	UX5: The content in BCA Mobile banking app is presented clearly.	
		UX6: The used graphics in BCA Mobile banking app are appropriate, not excessive.	
		UX7: The used of colour in BCA Mobile banking app is not excessive.	
		UX8: The design, icons, and labels in BCA Mobile banking app are visually appealing and clear.	
		UX9: I feel comfortable using BCA Mobile banking app.	
		UX10: I enjoy using BCA Mobile banking app for my everyday financial activities.	
	Usability	UX11: I was able to learn how to use BCA Mobile banking app quickly and easily.	
		UX12: It's easy for me to find the information I need in this BCA Mobile banking app.	
		UX13: The structure of the menu and pages of BCA Mobile banking app can be easily found.	
Customer Satisfaction (X2)		CS1: I will choose to use the services offered by BCA Mobile banking app to meet my needs.	[15]
		CS2: I am satisfied with the services provided by BCA Mobile banking app for every transaction.	
		CS3: Overall, I am satisfied with the services provided by BCA Mobile banking app.	
Customer Loyalty (Y)		CL1: I will say positive things about the services provided by BCA Mobile banking app to others.	[15]
		CL2: I will recommend the services of BCA Mobile banking app to others who ask me for advice.	
		CL3: I prefer transactions using BCA Mobile banking app.	

SmartPLS software is used as the analysis tool in this study. The validity test used is convergent validity, which evaluates the precision of an item. Convergent validity is evaluated by examining the factor loading scores and the resulting average variance extracted (AVE) [23]. When using the PLS model, the R-squared value, also known as the coefficient of determination, evaluates the extent to which the model accounts for the variation in each outcome variable. This measure reflects the level of impact independent variables have on the dependent variable. [24]. Bootstrapping assesses the significance of relationships within the model by generating t-statistics and p-values for hypothesis testing. This process tests each variable's direct and indirect effects, including the influence of mediating variables on the suggested model.

3. RESULT AND DISCUSSION
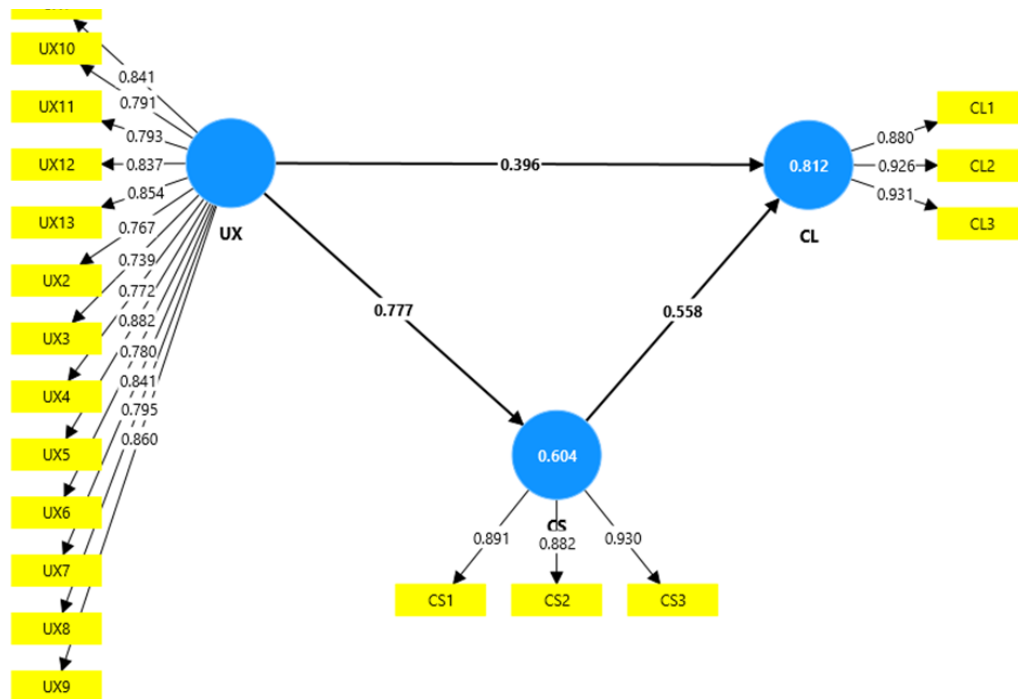### 3.1. Table Respondent Characteristics

Table 2. Respondent Characteristics

Category	Count	Percentage
Gender		
Male	69	42.9%
Female	92	57.1%
Age		
17-25 years old	98	60.9%
26-34 years old	39	24.2%
35-43 years old	24	14.9%
Last Education		
Primary School	2	1.2%
Secondary School	8	5%
High School	71	44.1%
Bachelor Degree	79	49.1%
Magister Degree	0	0%
Doctorate Degree	1	0.6%
Domicile		
Kota Batam	151	93.8%
Tanjungpinang	6	3.7%
Jakarta	3	1.9%
Bekasi	1	0.6%
Job		
Student	53	32.9%
Employee	51	31.7%
Civil Servant	4	2.5%
Self-Employed	50	31.1%
Other	3	1.8%
Monthly Income		
< Rp 4.000.000	30	18.6%
Rp 4.000.000 - Rp 7.000.000	60	37.3%
Rp 7.000.001 - Rp 10.000.000	49	30.4%
> Rp 10.000.001	22	13.7%

Table 2 provides an overview of the respondents' characteristics based on the collected data. Out of a total of 165 respondents, only 161 respondents met the inclusion criteria for this study. The majority of participants (98 respondents) are aged 17–25 years, with most identifying as students (53 respondents), followed closely by employees (51 respondents) and self-employed individuals (50 respondents). The vast majority, 151 respondents, reside in Batam, and 60 respondents reported an income range of Rp 4,000,000 – Rp 7,000,000.

3.2. The result of outer model testing

The outer structural model was evaluated to investigate its validity and reliability. The results of the outer model using SmartPLS 4 software are presented in **Figure 2.**

Figure 3. SEM Outer Model

According to convergent validity criteria, all indicators' value is required to be greater than 0.70. As indicated by the table below, all indicators met the minimum requirement. Therefore, the indicators used in this study are valid and can be relied upon to measure its respective construct variables.

Table 3. Outer Loading Factor of Indicator

	Customer Loyalty (CL)	Customer Satisfaction (CS)	User Experience (UX)	Description
CL1	0.880			Valid
CL2	0.926			Valid
CL3	0.931			Valid
CS1		0.891		Valid
CS2		0.882		Valid
CS3		0.930		Valid
UX1			0.841	Valid
UX10			0.791	Valid
UX11			0.793	Valid
UX12			0.837	Valid
UX13			0.854	Valid
UX2			0.767	Valid
UX3			0.739	Valid
UX4			0.772	Valid
UX5			0.882	Valid
UX6			0.780	Valid
UX7			0.841	Valid
UX8			0.795	Valid

UX9	0.860	Valid

3.3. The result of Inner Model Testing

Table 4. R-square Output

	R-square	R-square adjusted
Customer Loyalty (CL)	0.812	0.809
Customer Satisfaction (CS)	0.604	0.601

Table 4 presents the R-square values for the dependent variables. The linear model is perfectly aligned with R-square statistics, which can achieve a maximum value of 1.000, or 100%. However, in most studies, R-Square values fall below this maximum due to varying criteria in different research settings. User experience is not included because the variable does not have coefficient of determination R square, as other variables do not influence the variable in this study. With a R square value of 0.812, the customer loyalty variable is within a strong range. User experience and customer satisfaction account for 81.2% of the variable, with other variables not covered in this study accounting for the remaining 18.8%. In contrast, the customer satisfaction variable's R square value of 0.604, which is within the moderate range, shows that the user experience variable accounts for 60.4% of the variable's explanation, with the remaining portion being influenced by variables outside of the scope of this study.

3.4. Hypothesis Testing

Table 5. Bootstrapping output – Total Direct Effect

	Original sample (O)	T statistics (|O/STDEV|)	P values	Significance Levels
CS -> CL	0.558	5.693	0.000	Significant
UX -> CL	0.396	3.987	0.000	Significant
UX -> CS	0.777	16.723	0.000	Significant

The hypothesis of the study can be accepted if the p-value is below 0.05 and the calculated t-statistic exceeds the critical value from the t-table (1.96). The results indicate that customer satisfaction has a significant positive effect on customer loyalty (T = 5.693, p < 0.001), highlighting the critical role of satisfaction in promoting loyalty. Additionally, user experience demonstrates a strong positive influence on customer satisfaction (T = 16.723, p < 0.001) and has a direct and significant impact on customer loyalty (T = 3.987, p < 0.001).

3.5. Mediation Role Test

Table 6. Bootstrapping Output – Specific Indirect Effect

	Original sample (O)	T statistics (|O/STDEV|)	P values	Significance Levels
UX -> CS -> CL	0.433	4.995	0.000	Significant

Table 7. Total Direct Effects and VAF Calculation

	Original sample (O)	T statistics (|O/STDEV|)	P values
UX -> CL	0.396	3.987	0.000

VAF Value of Customer Satisfaction
Indirect Effect/Total Effect   0.433/0.396= 1.093 = 109%

Mediation analysis indicates that customer satisfaction acts as a mediating variable. The results show the VAF value is 1.093, implying that customer satisfaction plays a dominant role at 109% as a mediator

The VAF value of over 100% suggests that customer satisfaction's indirect influence on customer loyalty is greater than the direct impact of user experience. This highlights the critical role

of the mediator, as supported by Hair et al. [23], who note that VAF > 100% reflects a dominant mediated relationship when both direct and indirect effects are significant and consistent. These findings categorize user experience as partial mediation, where customer satisfaction strengthens the relationship between user experience and customer loyalty, while user experience also directly influences customer loyalty. Both the direct and indirect effects are significant, confirming the dual role of user experience.

In summary, while user experience directly impacts customer loyalty, its influence is primarily amplified through customer satisfaction, highlighting the significance of satisfaction in driving loyalty in the mobile banking context, especially in BCA Mobile.

3.6. Discussion

H1 = Customer satisfaction has a positive effect on customer loyalty. The results above support this hypothesis, where the p value is 0.000 and the t-statistic is 5.693, which the minimum value is 1.650 means it is showing a significant positive effect of customer satisfaction on customer loyalty. This indicates that higher satisfaction levels among users of BCA Mobile translate into greater loyalty. This highlights the importance of providing consistent and high-quality experiences to maintain customer commitment that will affect the growth of BCA Mobile usage.

H2 = User experience has a positive effect on customer satisfaction. The results above support this hypothesis, with results showing that user experience significantly and positively impacts customer satisfaction where the p value is 0.000 and t-statistic is 16.723. This reinforces the notion that an intuitive, efficient, and enjoyable user experience directly enhances satisfaction. For mobile banking, investing in user experience improvements, such as ease of navigation and system adoptability, appears crucial for achieving higher satisfaction rates.

H3 = User experience has a positive effect on customer loyalty. The results above also support this hypothesis, showing a direct positive effect on User Experience on Customer Loyalty with p-value is 0.000 and t-statistic is 3.987. Providing a seamless and positive user experience drives customer retention. Where is support by this previous study [25], which show that it has a direct effect between user experience and customer loyalty.

H4 = User experience has a positive effect on customer loyalty mediated by customer satisfaction. The results above confirm this hypothesis, with Customer Satisfaction mediating the relationship between User Experience and Customer Loyalty. The indirect effect results is significant and the Variance Accounted For (VAF) results is 109% demonstrate that the mediated pathway is dominant. This indicates that while User Experience directly influences Customer Loyalty, its effect is significantly amplified through Customer Satisfaction.

4. CONCLUSION

All tested hypotheses were successfully proven where all of the four hypotheses were declared accepted. The analysis confirms that customer satisfaction significantly impacts customer loyalty, emphasizing that satisfaction is a crucial determinant of loyalty in mobile banking services. Additionally, user experience plays a vital role by positively influencing both customer satisfaction and customer loyalty, demonstrating that a seamless and efficient user experience fosters satisfaction and directly enhances loyalty.

Furthermore, mediation analysis reveals that customer satisfaction acts as a key mediator in the relationship between user experience and customer loyalty, with a dominant mediating effect. This suggests that while user experience directly affects customer loyalty, its influence is significantly amplified when users are satisfied with the mobile banking service. The Variance Accounted For (VAF) of 109% underscores the critical role of satisfaction in strengthening this relationship.

Despite these insights, this study has several limitations. The number of respondents could be increased, as only 161 respondents were included in this study, which may limit the statistical robustness of the findings. Additionally, the majority of respondents reside in the Batam area, which may not fully represent the diverse user base of BCA Mobile across Indonesia. In addition, this study only focuses on user experience, suggestions for further research to add several variables that can affect customer satisfaction and loyalty in using BCA mobile to provide a more comprehensive understanding of customer behaviors.

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