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## Effect of System and Service Quality to Customer Loyalty through M-BCA User Satisfaction in Surabaya, Indonesia

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### **Abstract:**

*Technological advances provide new breakthroughs that can be used by banks to improve service quality for their customers. Bank Central Asia (BCA) provides a mobile banking facility called m-BCA which stands for mobile BCA. By using an internet-connected cellphone, customers can conduct banking transactions without limitation of time and place. This study aims to find out how big the system quality and service quality is so that it increases user satisfaction, which in turn will increase loyalty from M-BCA. This research is a causal study. The research method used is a quantitative method by processing data using SPSS. Data collection was carried out by distributing questionnaires to 115 respondents with characteristics of male and female respondents aged 18-60 years, domiciled in Surabaya, and using M-BCA for the past 6 months. The results showed that system quality variables had a significant effect on user satisfaction with a regression coefficient of 0.458; service quality variables have a significant effect on User Satisfaction with a regression coefficient of 0.354; the variable system quality and service quality have significant simultaneous effect to customer loyalty. User satisfaction variable has a significant effect on customer loyalty with a regression coefficient of 0.469. The researcher's main recommendation is to increase the responsiveness of the M-BCA system. When the M-BCA system is offline, customers cannot receive transfers during certain hours. This is because the system quality variable in this study is the most important.*

**Keyword:** System quality, service quality, user satisfaction, customer loyalty, M-BCA

### **1. Introduction**

Internet causes many changes in human life, especially in the banking sector. Nowadays, customers are further facilitated by the existence of banking services that can be accessed anytime and anywhere. Customers can run the various needs desired without the need to come to a designated bank or go to an ATM. By using a connected internet, customer can check balances, transfer funds, and perform some other banking services. The term used in carrying out banking transactions through mobile gadget such as a mobile phone is known as mobile banking (Anyasi & Otubu, 2009). Progression in information technology has changed how organizations conduct and operate their business over the past few years (Al-Jabri, 2012).

BCA leverages on digital technology to expand its products and services in accommodating customer needs, and improve operational efficiency. Investments are continuously made to develop internet and mobile banking, and application-based services. BCA maintains its investment in efficiency-oriented programs, including the development of Cash Recycling Machines (CRM). These efforts have shown positive results. In line with the shift of customer preferences toward digital-based services, the number of transactions conducted through internet, mobile and ATMs accounts for 97% of total customer transactions processed by BCA.

The resource-based view (RBV) is a managerial framework used to determine the strategic resources with the potential to deliver competitive advantage to a firm. These resources can be exploited by the firm in order to achieve sustainable competitive advantage. Barney's 1991 article "Firm Resources and Sustained Competitive Advantage" is widely cited as a pivotal work in the emergence of the resource-based view. However, some scholars argue that there was evidence for a fragmentary resource-based theory from the 1930s. RBV proposes that firms are heterogeneous because they possess heterogeneous resources, meaning firms can have different strategies because they have different resource mixes. The RBV focuses managerial attention on the firm's internal resources in an effort to identify those assets, capabilities and competencies with the potential to deliver superior competitive advantages.

BCA is a pioneer in the provider of mobile-based banking services in Indonesia, but according to market developments, it is necessary to examine BCA's user loyalty level in using this mobile-based banking service. This review is done so that BCA can continue to run the performance of its mobile banking services and remain at the forefront.

## 2. Literature Review

### 2.1. M-BCA

The terms used in carrying out banking transactions through mobile gadget such as a mobile phone is known as mobile banking (Anyasi & Otubu, 2009). Another definition for m-banking as the subset of applications of mobile e-commerce offered by the financial industry. In fact, mobile commerce is also known as a subset of e-commerce that uses radio-based wireless devices to conduct business transactions over the web (Keng & Zixing, 2003).

Mobile banking and the internet have not just made financial organization provide banking services via mobiles and online, but they have provided their customers with easy access to financial services and other benefits (Al-Jabri, 2012). The services of mobile banking can be used to raise proficiency and help business develop through efficient, cheap and reliable money service support system that lessen the need for cash transaction and the associated risks (Anyasi & Otuba, 2009). The advantages of the cashless transaction including less opportunity for criminal and fraudulent activities, and mobile money technology (Wishart 2006).

To get M-BCA facility, the customer must fill out a request letter to the bank and register the mobile number that will be used in addition to the password for security transactions (Roger A. Kerin & Lau Geok Theng, 2013). Once a user obtained a registered account for mobile banking from the banking institution, he or she would be able to do banking transactions from anywhere.

Currently in Indonesia, there are many banks spread throughout Indonesia. One of them is Bank Central Asia or better known as Bank BCA. Research conducted by the Trisakti Institute of Service Management Studies Foundation in 2003 shows that PT Central Bank Tbk was ranked first in the category of banks that were chosen by many customers, followed by banks Mandiri, Lippobank, Bank BNI, and BRI. BCA was officially established on February 21, 1957 under the name Bank Central Asia NV. BCA has several banking products and services, namely BCA ATM, BCA Debit, BCA Cash, BCA internet banking (KlikBCA), Flazz and BCA mobile banking, known as M-BCA. BCA has won many achievements both in Indonesia and abroad. From BCA data by the end of 2017, the number of transactions reached Rp 581.1 trillion transactions. Whereas the number of transactions using the mobile banking had reached 1.161 million with a value of Rp 970 trillion or grew by 25.57%.

### 2.2. System Quality

System quality is a characteristic of the inherent information about the system itself where the quality of the system refers to how well the capabilities of hardware, software, and procedure policies of information systems can provide information on user needs (Delone & McLean, 1992). Murdick & Ross (1993) define system quality as a match for using a set of elements that are combined with one another to meet customer needs and satisfaction. According to Romney & Steinbart (2015), the system is a series that consists of two or more interconnected components and interact with each other to achieve a goal where the normal system is divided into smaller sub-systems that support a larger system. Through these definitions, it can be concluded that a system created must be able to produce customer satisfaction.

According to Tam & Oliveira (2016), indicators of System Quality are:

1. Navigation from m-banking is easy to understand
2. M-banking makes it easy to find the information sought
3. M-banking has a good menu structure
4. M-banking is easy to use
5. M-banking offers appropriate functionality

### 2.3. Technology Acceptance Model

Technology Acceptance Model (TAM) tries to establish a relationship and it also describe the intention of users and how users are influenced by a product or service. It emphasizes the importance of perceived usefulness and ease of use in technology adoption (Davis FD, 1989).

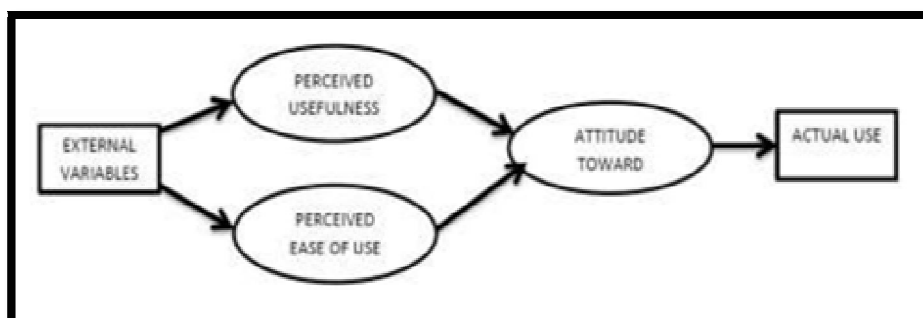


Figure 1: Technology Acceptance Model (Davis FD, 1989)

TAM was formulated in an attempt to achieve these goals by identifying a small number of fundamental variables suggested by previous research dealing with the cognitive and affective determinants of computer acceptance, and using TRA as a theoretical backdrop for modeling the theoretical relationships among these variables. The TAM model had been applied to different aspects of newly introduced technology, such as the dial up system, email, hospital information

systems, decision making systems, etc. through field studies, surveys, etc. This model has also been compared to two other models, which is the Theory of Reasoned Action and the Theory of Planned Behavior (Davis FD, 1989).

#### 2.4. Delone & Mclean IS Success Model

The original D&M taxonomy was based on Mason's (1978) modification of Shannon and Weaver's (1949) mathematical theory of communications, which identified three levels of information:

- The technical level (accuracy and efficiency of the system that produces it);
  - The semantic level (its ability to transfer the intended message), and
  - The effectiveness level (its impact on the receiver) (shannon & weaver, 1949).
- Mason (1978) adapted this theory for is and expanded the effectiveness level into three sub-categories:
- Receipt of information,
  - Influence on the recipient, and
  - Influence on the system.

The original D&M model (Figure 1) identified six factors for the success of IS, namely system quality, information quality, system use, user satisfaction, individual impact, and organizational impact. This general theory of IS posits that the match between information quality and system quality is more likely to have a positive impact on performance if the end-user feels satisfaction and uses the system (Tam, C & Oliveira, T., 2016).

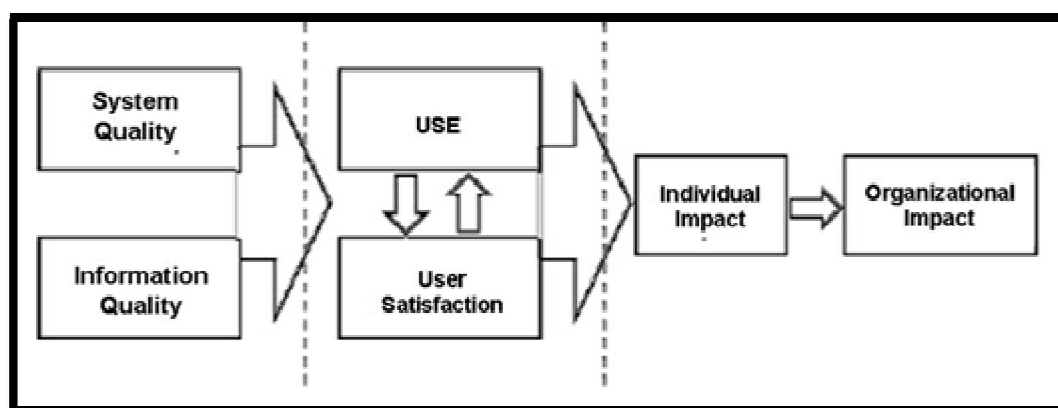


Figure 2: Original D&M IS Success Model (Tam, C & Oliveira, T., 2016)

#### 2.5. Service Quality

E-service is a transaction, that is, the customer pays for the goods or services (the hard e-service), and the supplier is responsible for delivering on time (Douglas, Muir, & Meehan, 2003). E-service as information service (Rust & Lemon, 2001), which is basically a customer's interactions with a Website (Parasuraman, Zeithaml, & Malhotra, 2005). According to Boyer, Hallowell and Roth (2001), e-services provide a unique opportunity for businesses to offer new models for service design strategies and new service development. Firstly, all service providers, whether they are traditional 'brick-and-mortar' or pure Internet players, now have more delivery channel options for competing. Secondly, many new services can be offered more economically with both greater geographic reach and product variety. In online banking industry, Herington and Weaven (2009) found four dimensions of e-Service Quality: personal needs, site organization, user friendliness, and efficiency; and all factors are rated as an important factor to determine the e-service quality. Zeithmal and his colleagues defined e-service quality as ranges on which electronic media leads to the ease of efficient and effective shopping, purchasing and delivery or feel products and the review of literature and services (Zeithmal et al., 2000).

From each definition described, the author concludes that e-service quality is an assessment given by service users to the service provider. Some aspects of concern in e-service quality are the ease of accessing services, features provided, and how much e-service makes it easier for all transactions carried out by users of these services.

#### 2.6. User Satisfaction

According to Kotler (2002) customer satisfaction is a feeling of pleasure or disappointment someone who appears after comparing perceptions or impressions of performance is below expectations, customers are not satisfied. But, if performance exceeds expectations, customers are very satisfied and happy. If the performance is felt below expectations, the customer will feel disappointed, if the performance meets customer expectations, the customer will feel satisfied, whereas if the performance exceeds expectations, the customer will feel very satisfied. This satisfaction will certainly be felt after the customer concerned consumes the product.

Customer satisfaction is a measure on how the services provided or supplied by an organization meets or exceeds the expectations of a consumer. Customer satisfaction is obtained through meeting the expectations that consumers have about the mobile banking service, if the expectations of the reliability, safety, ease of use, etc. is met by the service, customer satisfaction will be high (meaning more consumers will engage into mobile banking) and if not, it will be low (meaning more consumers will not engage in using mobile banking services) (Gomachab Romiario, 2018).

In order for customers to be satisfied, the bank provides services by using technology to transact independently without the help of bank employees. The first dimension states the importance of ease of use of the system must be accepted by customers that by accessing the system will be free from effort. According to Louho, Kallioja and Oittinen (2006), technology

The importance of customer satisfaction in financial services has been extensively discussed in the literature. Compiling from previous studies, Arbore & Busacca (2009) summarized that determinants of customer satisfaction in a banking services include (i) functional quality – reliability, speed, accuracy, functionality (ii) relational quality – responsiveness, assurance, friendliness, courtesy, commitment, communication (iii) convenience – opening hours, travel distance, queuing time, parking places, ATM availability (iv) economics – interest rates, price quality, ratio, price fairness (v) tangibles – physical layout and furniture, physical facilities, decoration of branch environment, atmosphere of branch environment, cleanliness, size and furnishing of customer space, dress of the personnel (vi) problem – handling and recovery. In the context of mobile banking, Saleem & Rashid (2011) found that antecedents of mobile banking satisfaction are organizational factors, technological factors, strategic factors and functional factors. According to Gaffar (2009), mobile banking may help increase customer satisfaction ratio by adopting the following means (i) innovative “anywhere, anytime” services customized for individual preferences and the current geographical location of the customer provide value-added to the customer, (ii) more attention and better consulting for individual customers due to automation of routine processes, and (iii) streamlining of business processes to increase efficiency.

According to Tam & Oliveira (2016), the indicator of User Satisfaction is:

- I am satisfied with the performance of m-banking
- I am satisfied with the use of efficient m-banking
- I am satisfied with the use of effective m-banking

### 2.7. Customer Loyalty

Loyalty concept in Internet is interpreted as the e-loyalty and it is a relatively new concept (Lake, 2009) and is considered a branch of loyalty concept that is implemented in commerce (Al Agaga & Nour, 2011). In fact, the concept of e-loyalty extends traditional loyalty to an online consumer behavior. Discoveries from Larson and Susanna (2004) showed the same explanation that loyalty is creating commitment in customer for executing with a specific association and buying its items and services frequently. Customer loyalty is tied in with pulling in the correct customer, getting them to purchase, often purchase, purchase in higher quantities and bring you, even more, customers (Arvinlucy Akinyi Onditi et al., 2012). Anderson, Serini and Asan (2003) have defined e-loyalty as a favorable attitude and customer commitment toward an electronic business resulting in repeating shopping behavior (Leung et al., 2011).

According to Zeithaml et al, 1996 (in Saputra, 2011) companies that develop and maintain customer loyalty will gain long-term success. Therefore, customer loyalty based on pure and continuous satisfaction is the biggest asset that the company has. Loyalty can be seen through the use of M-BCA, which is continuously carried out by customers, then customers will recommend their relationships to participate in using M-BCA services, and stay on negative issues related to M-BCA.

## 3. Experimental Section/Material and Methods

This research is a causal research that uses hypothesis in solving each problem. The research method used is quantitative method with data processing using SPSS. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon (Babbie, 2010). Data collection was done by distributing questionnaires to 115 respondents with characteristics of male and female respondents aged 18-60 years, domiciled in Surabaya, and using M-BCA for the last 6 months. From this research model, it is expected to explain the relationship between variable to understand the factors that influence customer loyalty from M-BCA users while making a conclusion that the results can be a measurement that will be described in this study.

### 3.1. Method of Collecting Data

Data collection in this research will be conducted by distributing questionnaires to respondents who are in accordance with predetermined sample criteria. The scale used in this study is a Likert scale, where answers are provided at intervals from strongly disagree (SD) to strongly agree (SA).

### 3.2. Conceptual Framework

Acquisition of basic e-banking computer skill could enable users to overcome most problems associated with lack of trust such as identification of attack prone websites, updating of personal account e-banking services as well as gaining experiences on personal information should be used or shared with other internet users (Godwin et al., 2010; Liao and Cheung, 2008).

Prevailing distinction arising from the use of traditional banking services to electronic-based banking services relies on the willingness and ability to use e-banking technology for services offered through them in becoming partner in the delivery of e-banking services (Liao and Cheung, 2008).

Another qualitative study by Mäenpää, et al. (2008) examined the moderating role of familiarity, i.e. the amount of accumulated IB experience, in consumer perceptions, by interviewing Finish IB users. Referring to consumer satisfaction in IB, Liao and Cheung (2008) conducted a quantitative study to find out the service-quality attributes internet banks must

offer to induce consumers to switch to online transactions and keep using them, by measuring the customers' perspective of one of the Chinese Banks in Hong Kong.

Research modified the research model conducted by Carlos Tam \*, Tiago Oliveira (2016) The system quality, information quality, and service quality positively affect user satisfaction. Understanding the significance of m-banking context on individuals' performance is useful to provide new insight to banking, managers to apply strategies to retain users or even attract potential adopters.

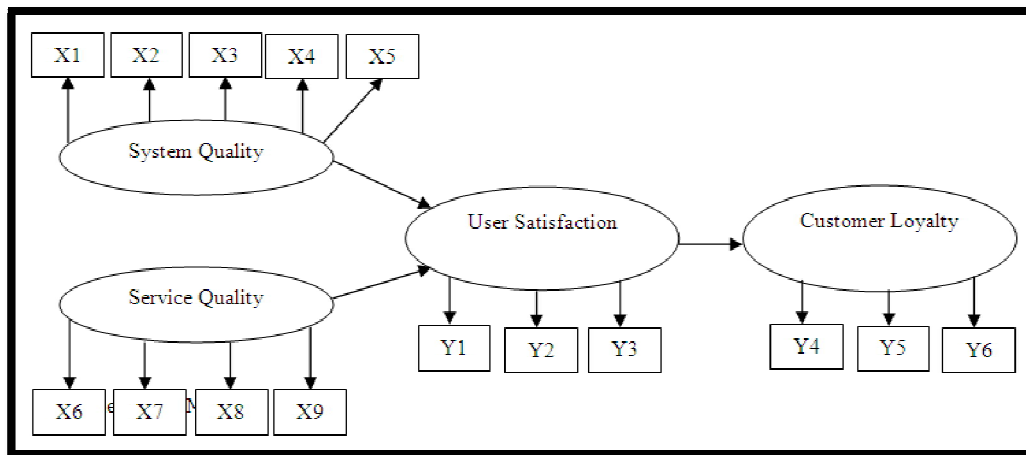


Figure 3: Research Model

- H1 = System Quality significantly influence the User Satisfaction.
- H2 = Service Quality variables significantly influence User Satisfaction.
- H3 = System Quality and Service Quality variables simultaneously significantly influence User Satisfaction.
- H4 = User Satisfaction variable has a significant effect on Customer Loyalty

3.3. Data Analysis Methods

A study requires data analysis and interpretation aims to answer questions in order to uncover certain social phenomena. Data analysis is the process of simplifying data to in a form that is easier to read and interpret.

Constructs	Items	Adapted From
System quality	X1- M-banking is easy to navigate X2- M-banking allows me to easily find the information I am looking for X3- M-banking is well structured X4- M-banking is easy to use X5- M-banking offers appropriate functionality	(Urbach et al., 2010)
Service quality	X6- The responsible service personnel are always highly willing to help whenever I need support with the mbanking X7- The responsible service personnel provide personal attention when I experience problems with the mbanking X8- The responsible service personnel provide services related to the m-banking at the promised time X9- The responsible service personnel have sufficient knowledge to answer my questions with respect to the mbanking	(Urbach et al., 2010)
User satisfaction	Y1-I am satisfied that m-banking meets my knowledge or information processing needs Y2-I am satisfied with m-banking efficiency Y3-I am satisfied with m-banking effectiveness	(Wu & Wang, 2006)
Customer Loyalty	Y4-I will continue to use the M-BCA service continuously Y5-I will give recommendations to my relations to use M-BCA Y6-I will continue to use M-BA services even if there are negative issues in the community	Philip Kotler and Keller (2007)

Table 1: Questionnaire Core Design  
Source: Data processed, 2019

3.4. Hypotheses Tests.

System quality comprises the desirable characteristics (e.g. ease of use, system flexibility, and system reliability) of an information system (DeLone & McLean, 1992; Petter, DeLone, & McLean, 2008). Measuring the quality of information systems is a multidimensional process focusing on many of the aspects of a system such as system features, quality

features, usability aspects, and other features related to technical issues (Urbach & Müller, 2012). Typical measures of the system quality in traditional studies include response time, ease of use, flexibility, and stability (Wu & Wang, 2006).

Service quality is the quality of the support (e.g. responsiveness, reliability, conciseness, technical competence, and empathy of personnel) that system users receive from the IS department and IT support personnel (DeLone & McLean, 2003; Petter et al., 2008). Service quality is often described as how well a delivered service level matches customer expectation.

Customer satisfaction has been one of the top tools for a successful business. Customer satisfaction is defined as an overall evaluation based on the total purchase and consumption experience with the good or service over time (Fornell, Johnson, Anderson, Cha & Bryant 1996). Customer satisfaction is a crucial component of a business strategy as well as customer retention and product repurchase.

Loyalty building requires the company to focus the value of its product and services and to show that it is interested to fulfill the desire or build the relationship with customers (Griffin 2002).

Constructs	Hypotheses	Adapted from
System quality	H1. System Quality significantly influence the User Satisfaction	(Urbach et al., 2010)
Service quality	H2. Service Quality variables significantly influence User Satisfaction	(Urbach et al., 2010)
User satisfaction	H3. System Quality and Service Quality variables simultaneously significantly influence User Satisfaction	(Wu & Wang, 2006)
Customer Loyalty	H4. User Satisfaction variable has a significant effect on Customer Loyalty	Philip Kotler and Keller (2007)

Table 2: Hypotheses Tests  
Source: Data Processed, 2019

### 3.5. The Coefficient of Determination

The coefficient of determination, a.k.a.  $R^2$ , is a key statistic indicating how well a model including a set of predictors accounts for the variation in the response variable. While it shows the utility of these predictors in fitting the model, it also provides a measure of predictability of the response variable using the set of predictors.  $R^2$  can be used to choose the optimal set of predictors when the model size, i.e., the number of predictors, is fixed.

## 4. Results and Discussion

### 4.1. Overview of BCA Bank and M-BCA Services

Currently in Indonesia, there are many banks spread throughout Indonesia. One of them is Bank Central Asia or better known as Bank BCA. Research conducted by the Trisakti Institute of Service Management Studies Foundation in 2003 (in Info Bank, May 2004 Edition: 18).

BCA was officially established on February 21, 1957 under the name Bank Central Asia NV. BCA has several banking products and services, namely BCA ATM, BCA Debit, BCA Cash, BCA internet banking (KlikBCA), Flazz and BCA mobile banking, known as m-BCA (<https://www.bca.co.id/id/Individual/Product>, downloaded on April 5, 2019). At the end of December 2016, BCA served more than 15 million customer accounts and processed millions of transactions every day supported by 1,211 branch offices, 17,207 ATMs and more than 400 thousand EDC machines and transactions through internet banking and mobile banking services that can be accessed 24 hours. (<https://www.halomoney.co.id/blog/bca-mobile>, downloaded on April 5, 2019). BCA was the first bank to launch the first m-banking system in Indonesia compared to other banks, also known as m-BCA. (<https://www.money.id/finance/nah-ini-dia-sejarah-serta-5-fitur-m-banking-di-indonesia-160517b.html>, downloaded on April 5, 2019). Of the total BCA customers, 35% are Internet users and 40% are mobile banking users. (<https://swa.co.id/swa/trends/management/bca-terus-mengikutiperkembangan-teknologi-demi-kemananan-dan-kenyamanan-transaksi>, diunduh pada 5 April 2019).

### 4.2. Characteristics of Respondents

Respondents in this study were M-BCA users in Surabaya with provisions as explained above. 105 questionnaires were distributed and 115 of the questionnaires were returned in full and can be processed. Therefore, all processing of questionnaire data will use 115 respondents' data. The respondents had the criteria of being male and female, domiciled in Surabaya and using M-BCA services for the past 6 months. The instrument used in this study is a list of statements (questionnaire). The total number of questions is fifteen statements consisting of five questions about System Quality, four questions about Service Quality, three questions about User Satisfaction, and three questions about Customer Loyalty.

### 4.3. General Description of Respondents by Age

Respondents in this study were M-BCA service users in Surabaya. Profile of respondents in this study will be described based on age. The following table of profiles of respondents obtained from this study:

	Age	Frequency	Percent	Cumulative Percent
Valid	18-25	101	87.9	87.9
	26-35	8	6.9	94.8
	36-45	3	2.6	97.4
	46-60	2	1.7	99.1
	>60	1	0.9	100
	Total	115	100	

Table 3: Responden Berdasarkan Usia  
Source: Data processed, 2019

Based on Table 3, it is known that most of the age of MBCA users in Surabaya as many as 87.9% or 101 respondents are respondents aged 18-25 years.

#### 4.4. General Description of Respondents by Gender

Respondents in this study were M-BCA service users in Surabaya. Profile of respondents in this study will be described based on gender. The following table of profiles of respondents obtained from this study:

	Jenis Kelamin	Frequency	Percent	Cumulative Percent
Valid	Wanita	70	61.2	61.2
	Pria	45	38.8	100
	Total	115	100	

Table 4: Responden Berdasarkan Usia  
Source: Data Processed, 2019

Based on Table 4, it is known that most of the sex users of M-BCA services in Surabaya are 61.2% or 70 respondents are women while the remaining 38.8% or 45 respondents are male. So, in this study, the majority of M-BCA service users in Surabaya were women.

#### 4.5. Hypothesis Testing 1 (H1)

- H1: System Quality has a significant effect on User Satisfaction

System Quality is formed by M-BCA navigation indicators that are easy to understand, M-BCA makes it easy to find the information sought, M-BCA has a good menu structure, M-BCA is easy to use, M-BCA offers appropriate functionality. While User Satisfaction was formed by indicators satisfied with the performance of M-BCA, satisfied with the use of M-BCA, which was efficient, satisfied with the effective use of M-BCA.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.915	.294		3.111	.002
	SYSTEM QUALITY (X1)	.458	.074	.445	6.203	.000
	SERVICE QUALITY (X2)	.354	.060	.424	5.919	.000

Table 5: Testing of Hypothesis H1 and H2 Use T Testing  
Source: Data Processed, 2019

a. Dependent Variable: USER SATISFACTION (Y1)

b. B = Regression Coefficient Number

From data in Table 5, it is known that the significant value for the effect of system quality on user satisfaction is 0,000 <0.05 and the value of t count is 6,203 > 1,981, so it can be concluded that hypotheses tests (H1) is accepted which means there is an influence of system quality on user satisfaction. Regression coefficients is 0.458 implies that every 1% increase in the system quality level, user satisfaction will increase by 0.458. Because the value of the regression coefficient is positive, then it can be concluded that system quality has a positive effect on user satisfaction.

#### 4.6. Hypothesis Testing 2 (H2)

- H2: Service Quality has a significant effect on User Satisfaction

Service Quality formed by BCA customer service indicators always helps solve customer problems, BCA customer service gives more attention to helping customers, BCA customer service resolves problems in a timely manner, BCA customer service has sufficient knowledge to answer customer questions. Whereas User Satisfaction was formed by indicators satisfied with the performance of M-BCA, satisfied with the use of an efficient, satisfied MBCA with the effective use of M-BCA. From data in Table 5, it is known that the significant value for the effect of service quality on user satisfaction is 0,000 <0.05 and the value of t count is 5,919 > 1,981, so it can be concluded that hypotheses tests (H2) is

accepted which means there is an effect of service quality on user satisfaction. Regression coefficients is 0.354 implies that for every 1% increase in the level of service quality, user satisfaction will increase by 0.354. Because the value of the regression coefficient is positive, then it can be concluded that service quality has a positive effect on user satisfaction

#### 4.7. Hypothesis Testing 3 (H3)

- H3: System Quality and Service Quality variables simultaneously significantly influence User Satisfaction

System Quality is formed by M-BCA navigation indicators that are easy to understand, M-BCA makes it easy to find the information sought, M-BCA has a good menu structure, M-BCA is easy to use, M-BCA offers appropriate functionality. Service Quality formed by BCA customer service indicators always helps solve customer problems, BCA customer service gives more attention to helping customers, BCA customer service resolves problems in a timely manner, BCA customer service has sufficient knowledge to answer customer questions. Whereas User Satisfaction was formed by indicators satisfied with the performance of M-BCA, satisfied with the use of an efficient, satisfied MBCA with the effective use of M-BCA.

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.752	2	10.376	72.251	.000 <sup>b</sup>
	Residual	16.085	112	.144		
	Total	36.837	114			

Table 6: Testing of Hypothesis (H3) Use F Testing

Source: Data Processed, 2019

a. Dependent Variable: User Satisfaction (Y1)

b. Predictors: (Constant), Service Quality (X2), System Quality (X1)

Based on the output in Table 6, it is known that the significance for the effect of system quality and service quality simultaneously on user satisfaction is  $0,000 < 0,05$  and the calculated f value is  $72,251 > f$  table 3,08, so it can be concluded that hypotheses tests (H3) is accepted, which means system quality and service quality variables simultaneously significantly influence user satisfaction.

#### 4.8. Hypothesis Testing 4 (H4)

- H4: User Satisfaction variable has a significant effect on Customer Loyalty

User Satisfaction was formed by indicators satisfied with the performance of M-BCA, satisfied with the use of M-BCA, which was efficient, satisfied with the effective use of M-BCA. While the Customer Loyalty formed by the indicator will continue to use the M-BCA service continuously, will provide recommendations to relations to use M-BCA, will continue to use the MBCA service even if there are negative issues circulating in the community.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.040	.385		5.299	.000
	USER SATISFACTION (Y1)	.469	.087	.451	5.371	.000

Table 7: Testing of Hypothesis (H4) Use T Testing

a. Dependent Variable: Customer Loyalty (Y2)

Source: Data Processed, 2019

From data in Table 7 it is known that the significant value for the effect of user satisfaction on customer loyalty is  $0,000 < 0,05$  and the value of t count is  $5,371 > 1,981$ , so it can be concluded that hypotheses tests (H4) is accepted which means there is an influence of user satisfaction on customer loyalty. Regression coefficients is 0.469 means that every 1% increase in the level of user satisfaction, then customer loyalty will increase by 0.469. Because the value of the regression coefficient is positive, then it can be concluded that user satisfaction has a positive effect on customer loyalty.

#### 4.9. Determination Coefficient System Quality and Service Quality through User Satisfaction

The coefficient of determination is useful for predicting and seeing how much contribution the influence is given to the System Quality, Service Quality variables simultaneously to User Satisfaction.



Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751 <sup>a</sup>	.563	.556	.37896

Table 8: Determination Coefficient System Quality, Service Quality through User Satisfaction Predictors: (Constant), Service Quality (X2), System Quality (X1)  
Source: Data processed, 2019

Based on the output in Table 8, it is known that the R Square value is 0.563, this means that the effect of variables system quality and service quality simultaneously on the user satisfaction variable is 56.3%. While the rest (100% - 56.3% = 43.7%) is influenced by other variables outside of this regression equation or variables not examined.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.451 <sup>a</sup>	.203	.196	.53003

Table 9: Determination Coefficient User Satisfaction Through Customer Loyalty  
Source: Data Processed, 2019  
a. Predictors: (Constant), User Satisfaction (Y1)

Based on the output in Table 9, it is known that the value of R Square is 0.203, this means that the effect of the variable user satisfaction on the customer loyalty variable is 20.3%. While the rest (100% - 20.3% = 79.7%) is influenced by other variables outside of this regression equation or variables not examined.

Indicators	Pearson Correlation	Mean
X1	0.744	4.322
X2	0.611	4.183
X3	0.647	4.226
X4	0.859	4.261
X5	0.750	4.435

Table 10: Correlations of System Quality  
Source: Data processed, 2019

The indicator with the highest Pearson correlation value from System Quality is X4 (M-banking is easy to use) with the first highest value 0.859 with a mean value of 4.261. This shows that the indicator is the most important indicator in increasing the value of System Quality. Therefore, the X4 indicator needs to be considered. If seen from the mean value, the average value is the third largest mean of the 5 indicators that are in the System Quality variable where consumers feel they agree with the X4 statement. Thus, the ease of use of the M-BCA is good but must be improved regarding the offline hours of the M-BCA system which results in customers being unable to receive transfers during certain hours.

The indicator with the second highest Pearson correlation value is the X5 indicator (M-banking offers appropriate functionality) amounting to 0.750 with a mean value of 4.435. In this case, BCA should continue to maintain the convenience of M-BCA navigation, such as instructions and sharing of features - features such as info, transfers, payments and others.

Indicators	Pearson Correlation	Mean
X6	0.694	4.322
X7	0.615	4.357
X8	0.732	4.139
X9	0.798	4.052

Table 11: Correlations of Service Quality  
Source: Data Processed, 2019

The indicators with the highest Pearson correlation value from Service Quality are X9 (The responsible service personnel have sufficient knowledge to answer my questions with respect to the bank) with the first highest value of 0.798 with a mean value of 4,052. This shows that the most important indicator in increasing the value of Service Quality is the X9 indicator. If seen from the mean value, the average value is the lowest mean of the 4 indicators in the Service Quality variable. In this case the M-BCA should provide training on product knowledge so that it can help answer the questions raised and provide the latest information.

The indicator with the second highest Pearson correlation value is the X8 indicator (0.732) and the mean value is 4.139 where this mean is the second lowest mean value so BCA needs to make improvements or development in this indicator. The way BCA can develop this indicator is to provide training to Customer Service about product knowledge so that Customer Service can answer more questions asked by customers.

Indicators	Pearson Correlation	Mean
Y1	0.838	4.313
Y2	0.839	4.452
Y3	0.825	4.348

*Table 12: Correlations of User Satisfaction*

*Source: Data Processed, 2019*

The indicator with the highest Pearson correlation value from User Satisfaction is Y2 (am satisfied with m-banking efficiency) with the first highest value 0.839 with a mean value of 4.452. This shows that the most important indicator in increasing the value of User Satisfaction is the Y2 indicator. When viewed from the mean, the average value is the highest mean of the 3 indicators in the User variable Satisfaction, so BCA must always maintain its performance from time to time through variable system quality and service quality.

The indicator with the second highest Pearson correlation value is indicator Y1 (I am satisfied that banking meets my knowledge or information processing needs) of 0.838 with a mean value of 4.313 where the mean value is the lowest mean so the BCA must pay attention to the system quality variable and service quality from time to time to be able to increase the satisfaction of using M-BCA effectively.

Indicators	Pearson Correlation	Mean
Y4	0.725	4.383
Y5	0.750	4.270
Y6	0.741	3.617

*Table 13: Correlations of Customer Loyalty*

*Source: Data processed, 2019*

The indicator with the highest Pearson correlation value from Customer Loyalty is Y5 (I will give recommendations to my relations to use M-BCA) with the first highest value 0.750 with a mean value of 4.270. This shows that the most important indicator in increasing the value of Customer Loyalty is the Y5 indicator. When viewed from the mean, the average value is the second highest mean of the 3 indicators in the Customer Loyalty variable. In this case, BCA should maintain the quality of all existing aspects of the variable, namely system quality and service quality to be able to maintain customer loyalty that allows customers to provide recommendations to their partners to use M-BCA.

The indicator with the second highest Pearson correlation value is the Y6 indicator (I will continue to use M-BA if there are negative issues in the community) at 0.741 with a mean value of 3.617. If seen from the mean value, the average value is the lowest mean of the 3 indicators in the Customer Loyalty variable. BCA needs to always update and maintain the quality of M-BCA features through a system quality and service quality variable to be able to increase customer loyalty that allows customers to use M-BCA services even if there are negative problems in the community.

## 5. Conclusion

The results showed that the variables of System Quality significantly influence the User Satisfaction with regression coefficient of 0.458; Service Quality variables significantly influence User Satisfaction with regression coefficient of 0.345; System Quality and Service Quality variables simultaneously significantly influence User Satisfaction; User Satisfaction variable has a significant effect on Customer Loyalty with regression coefficient of 0.469.

In the system quality, the ease of use of the M-BCA is good but must be improved regarding the offline hours of the M-BCA system which results in customers being unable to receive transfers during certain hours. BCA should continue to maintain the convenience of M-BCA navigation such as instructions and sharing of its features including info, transfers, payments and more.

In service quality, M-BCA should provide training on product knowledge so that it can help answer the questions asked and provide the latest information.

In user satisfaction, BCA must always maintain its performance from time to time through system quality and service quality variables to increase the satisfaction of effective use of M-BCA.

In customer loyalty, BCA should maintain the quality of all existing aspects of the system, namely system quality and service quality to be able to maintain customer loyalty that allows customers to provide recommendations to their partners to use M-BCA and enable customers to use M-BCA services even if there are negative problems in the community.

The main recommendation used for offline systems is M-BCA which has customers unable to receive transfers within certain hours. This is because the variable quality system in this study is the most important. This is evidenced by the coefficient standard system quality of 0.445 through user satisfaction, compared to the coefficient standard service quality of 0.424 through user satisfaction, but the difference is not too different. So, service quality must be improved and system quality still maintained.

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