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Exploring the Relationship among Information Quality, System Quality, Trust and Flow Experience on Brand Loyalty of Smartphone Users

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Abstract:
The purpose this research is to explore the relationship among information quality, systemquality, trust andlow experienceon brand loyalty on smartphone users.Based on 150 valid responses colleted from a survey quetionnaire, structural equation modeling (SEM) technologywas employed to examine the research model.The result show that both information quality and system quality significantly effect users' trust and flow experiences, which futher determinane their loyalty. Moreover, the flow experience is the strongerst determinant of users' loyalty, while the effect of system quality strongerthan information quality. These findings implied that Xiaomi have better effects than Oppo and Samsung.Therefore, smartphone providers need to consider user experience when seeking users' loyalty. They also should enhance information quality and system quality in order to improve user trust and flow experience.Although much research has been conducted to explore the effects of extrinsic motivations, such as perceived usefulness, on smartphone user behavior, the effect of intrinsic motivations, such as flow experience, is seldom tested. This research found the effect of flow experience on Xiaomi smartphone users' loyalty to be significant, but Oppo and Samsung not significant.

Keywords: *Mobile communication systems, Customer loyalty, Quality, Flow Experience*

1. Introduction

Indonesia is "the sleeping Asian digital technology giant market". Its population of nearly 250 million is a huge market for manufacturers to enter the region, because smartphone users in this country are growing rapidly. A digital marketing research institute E-marketer estimates that by 2018 the number of active smartphone users in Indonesia is more than 100 million people. With that amount, Indonesia will be the fourth most active smartphone country in the world after China, India and America (see: kominfo.go.id, accessed in December 2017).

The huge number of smartphone users in Indonesia encourages producers to compete in achieving their targets in the country. Research institute IDC (International Data Corporation) released a report of the smartphone market in Indonesia in the third quarter of 2017 that, as previously noted, Samsung topped the smartphone market share in Indonesia (30%). Under Samsung, Oppo following with a 25.5% market share. This market share increased compared to the third quarter of 2016, which was 16.7%. In contrast, Samsung's market share was declining by about 32.2% from the figures achieved in the same quarter last year. While under Oppo followed Advan (8.3 percent), Vivo (7.5 percent), and Xiaomi (5.2 percent), respectively in the third, fourth, and fifth position (see: techno.kompas.com accessed December 2017).

Related to the phenomenon of such development, then as one of the interesting research theme to be studied is how we connect the issue of consumer-based brand equity and customer's equity to loyalty. In this context, brand-based equity customers involve a set of memory-based brand-specific associations that exist in the minds of consumers (Kotler, 2005), whereas customer equity is defined as the value of the customer to the brand (Rust *et al.,* 2004). These two equities: brand equity and customer equity, emphasize the importance of customer loyalty (Wallace *et al.,* 2004). This is because customer loyalty generates a variety of benefits to the brand, and is the focus of an increasing number of marketing strategies (Joacoby & Chestnut, 1978). Customers who are loyal to a particular brand buy more, are willing to pay a higher price and produce positive word of mouth (Zeithaml *et al,* 1996). Customer loyalty is an important goal for sellers. This is due to an increasingly competitive retail environment and transitional factors at low cost in retaining customers (Wallace *et al.,* 2004). While the brand is one of the most important trends in retail (Grewal *et al.,* 2004). Successful retail brands can be very important in aiding the influence of consumer perceptions and the drive toward product selection and loyalty (Ailawadi, Pauwels, & Steenkamp, 2004; and Kotler, 2002).

In an increasingly competitive situation, then in an effort to seize the existing market share, smartphone manufacturers consider that equity is a potentially powerful variable in driving customers to remain loyal. This is reflected from the launch of their latest range of products, which offer a much more compelling quality of features, prices, and new designs, so they can attract new customers, and that existing customers can be more loyal to their product brand.

In line with this view, customer loyalty is an interesting issue to develop. Such a discourse shows that customer loyalty is an intention of repurchasing and willingness to recommend to others. Theoretically, the issue is still a debate on the determinants factors towards the equality of customer loyalty. This is due to the diversity of problems, observational objects and settings, as well as the research methods and variables that led to diverse constructs. This condition provides an opportunity to develop a model that can explain the phenomenon of customer loyalty to the use of smartphone products that occur in Indonesia. However, before explaining the model in question, it is necessary to explain the matters that became the debate of previous research.

Previous research has examined the theory of information technology adoption, such as technology adoption model (TAM), innovation diffusion theory (IDT), task technology fit (TTF) and unified theory of acceptance and usage of technology (UTAUT), to examine the factors that influence the adoption of online mobile user. These factors may include perceived usefulness, perceived ease of use, relative advantages, compatibility, task technology fit and expected performance (Gefen et al., 2003). However, there is only a little research has examined the effect of flow experience on the adoption of mobile commerce users. Flow experience is found to be important factors of user behavior (Novak *et al.,* 2000). In addition, compared to desktop computers, laptops have constraints including smaller screens, speech limitations, limited hardware upgrades that will slow down the response comfort. These constraints may affect the user experience, further affecting the loyalty and continued use of the product.

Lately we know that Android is booming among gadget lovers. There are many people who are willing to spend a lot of money just to use HP-based Android. Among the many reasons that exist, here are the main reasons why some people prefer Android to serve as the main gadget for everyday purposes. The advantages HP-based android include: 1) Stunning Graphic Display. No need to be denied, Android is a gadget that has a custom display system that "luxury". There are thousands of themes / launchers that you can use, both free and paid. 2) Browsing dan Web Browser**.** Browsing the internet is no longer a rarity. Every corner of the city there are many people who while sitting around they are holding gadgets and will be browsing looking for something. For purposes like that, Android also provides a variety of colors. You can use Android for browsing using the default web browser. In addition to the default Android browser, you can also use other browsers by downloading and installing through the Google Play Store. 3) Thousands of Free Apps and Games Waiting for Immediate Use. This is probably the best feature Android has. There are thousands of free applications that are ready to use anytime and anywhere. 4) Open Source**.** For this one, it seems more towards the manufacturer. Android is in great demand by major manufacturers because they know Android is a free mobile Operating Service (OS) that can be used, modified by anyone without having to pay licenses to the licensed owner of Google. By that way the cost to produce Android is much cheaper when compared with making your own OS or have to work with other OS providers such as Windows Phone made by Microsoft. 5) Producer Competition that will benefit the Consumers. Associated with previous points, all the manufacturers and individuals can develop Android. So by that way, the manufacturers will be competing to make the best at a cheap price. 6) Connected with Google Products. No doubt, Google is one of the most popular service providers on the internet.

From the various above mentioned advantages, HP Android of Oppo, Samsung, and Xiaomi is a brand that tends to be more familiar and most popular among consumers of gadgets or other smartphones today. Based on the observation in the field, this research focus on the three smartphones that aims to determine the influence of information quality and system quality to the level of consumer loyalty mediated by the level of consumer confidence and the flow of experience in the use of smartphones. This study is an advanced study conducted by Zhou*et al.* (2010) who examine the SNS providers in China.

2. Literature Review and Hypothesis

2.1. Brand

The definition of a brand stated by the American Marketing Association is a name, a sign, a term, a design, or a combination thereof, in order to certify a product or service from a seller or a group of sellers to distinguish it from a product or service from another competitor (Kotler 2002). Further, Kotler (2005) added that the brand is a complex symbol explaining six levels of understanding, i.e.;

a.	Attribute	Brands provide memory to certain attributes of a product.
b.	Benefits	Product attributes that can be remembered through the brand must be translatable in the form of benefits both functionally and emotionally beneficial.
c.	Value	Brand reflects the value that a product manufacturer has.
d.	Culture	Brand presenting a particular culture.
e.	Personality	Brand can project on a particular personality.
f.	User	Brands classify the types of consumers who will buy or consume a product.

Table 1

2.2. Information Quality and System Quality

At the earlier studies of information systems (IS) which mainly evaluated were performance of; (1) system quality itself, such as; accessibility, response time, integration, efficiency, and system flexibility, and (2) information quality, such as; accuracy of information, completeness, relevance, precision, and value for money (Bailey & Pearson, 1983). However, the organization of IS is increasingly playing a dual role to the both information and service providers because of the growth of end-user computing, decentralization, and options available on the source of IS services (Myers, Kappelman, & Prybutok, 1997). Pitt, *et al* (1995) suggested that performance of the IS service function should be assessed in measuring the effectiveness of the correct IS.Some previous studies (e.g.; Ballantine *et al,* 1996) consider the service function as an important element of IS. Further, one of the major differences between application services and traditional information systems is the ongoing relationship between Application Service Providers (ASPs) and end-user organizations. As evidence, service quality is one of the company's main concerns when selecting ASP services (Lyu *et al.,* 2009).Thus, ASP performance can be measured through system quality, information quality, and service quality. The performance of these products and services has often been modeled as a direct antecedent of satisfaction in the marketing literature (Kim, Zhao, & Yang, 2008).The direct impact of performance on satisfaction can be analyzed through the notion of a diversity of perceptual values (the ability to offer what the customer needs) compared to the costs incurred (Johnson, 1998).Similarly, IS quality perceptions can be modeled directly in influencing service user satisfaction (Pitt et al, 1995).

2.3. Information Quality

Information quality is an accuracy of the services provided by the service provider. In essence, information quality and system quality are the two main components of a successful information system model (DeLone & McLean, 2003). In this context, the information quality reflects the accuracy, comprehensivenessand timeliness of the information provided by the service provider (Nelson & Todd, 2005). Information quality is crucial because mobile users access mobile SNS to acquire information about their friends and to interact with them. Thus, if the mobile service provider is unable to provide accurate, comprehensive and timely information to its users, it is likely that users will tend to have a negative perception of the quality of information provided (Zhou et al, 2010).

2.4. System Quality

System quality is an accuracy of systems provided by the service provider. Its quality reflects the reliability, speed of response and ease of use of the SNS mobile platform (Nelson & Todd, 2005). If the mobile network is unstable and relatively slow, it will affect the reliability of the SNS mobile platform and the speed of the response and lead to it being rejected. In addition, compared to personal computers (PC), mobile terminals always have smaller screens and uncomfortable entries. Thus, it is very important for mobile service providers to provide an easy-to-use system platform for users (Zhou et al, 2010).

2.5. Trust

Trust is defined as a psychological state that making the intention to accept vulnerability based on expectations of intention or other behavior (Fogel & Nehmad, 2009). Trust is an important catalyst in building many transactional relationships. For example, in the marketing literature of trust-commitment relationships, trust have been conceptualized as a condition when one party has a belief in partners' reliability and its integrity (Ranaweera & Prabhu, 2003). Indeed, in this context trust may exist at the individual or enterprise level. But when the trust is conceptualized as the dimension of a technology acceptance model, it can be considered as an element that has a strong influence on the users' desire to communicate according to the fees and perceived personal sensitive information. Thus perceived ease of use and perceived usefulness may not fully reflect users' intentions to adopt mobile online services. (Wang et al, 2003).

Trust is important in an economic activity that involves opportunistic behavior to avoid undesirable things, and in this context behavior is the key to realizing a successful economic transaction. However, it is not a trivial task to define and measure trust. It's due to the general lack of concept in common, and most researchers believe that trust is a multidimensional concept (Mayer, Davis, & Schoorman, 1995). Some researchers define trust as a specific belief of integrated mandate representation, competence, and achieved goodness (Doney & Cannon, 1997). While the others define trust as a willingness to be vulnerable to the actions of others (Mayer et al., 1995), or the desire to rely on other things (Doney, C & Mullen, 1998). McKnight, *et al.* (2002) propose an integrated model that includes dispositions for trust, trust-based institutions, trusting beliefs, mutual trust intentions, and empirically examining their validity. Previous studies show that trust can reduce risk and uncertainty in trust-related behaviors (McKnight *et al.,* 2002), transaction costs, and disputes involved in many economic transactions (Ring & van de Ven, 1994). Trust is also useful for facilitating inter-organizational collaboration because organizations often depend on the performance of their partners and remain vulnerable to the opportunistic behavior of their partners (Kumar*et al,* 2003). The literature of IS outsourcing has strongly emphasized the mutual trust between the two parties as one of the most important factors for successful outsourcing (Cullen *et al.*, 2000).

Trust is needed when the truster does not have adequate control over what is believed (Das & Teng, 1998). Winning the customer trust is very important in the field of ASP (application system provider), because most application service customers face operational and business risks high enough in choosing and maintaining their application services (Bennett & Timbrell, 2000). For example, when executives opt for outside vendor applications, the risks associated with disclosure of

specific organizational knowledge by ASP are more serious concerns than outsourcing domestically and abroad (Schwarz et al., 2009). Small businesses, which currently have most applications based on their customer service, are generally incompetent in monitoring and controlling ASP opportunistic behavior. The prevalence of standard contracts for application services makes it difficult for client app services to control ASP correctly. Therefore the role of taste in these conditions becomes important with respect to risk and information asymmetry.

In addition, it was known that trust represents willingness to be placed in a vulnerable position based on positive expectations of future behavior of others. In building trust of mobile commerce users it is very important to pay attention on the separation of virtuality, anonymity, temporal and spatial (Siau & Shen, 2003). When users register with SNS mobile, they provide personal information such as name, postal address and e-mail. However, this information in the future may be incorrect, when for example; a sale transaction is made to a third party without the user's knowledge. Because this is a risk to user privacy, they need to build trust in a mobile service provider to reduce perceived risk and uncertainty (Fogel & Nehmad, 2009). Trust, when considered as user's belief, it often includes three dimensions: ability, integrity and virtue. The ability shows that mobile service providers have the skills and knowledge required to fulfill their tasks. Integrity refers to the fact that mobile service providers keep their promises and do not deceive users. Virtue means that mobile service providers will be first and foremost concerned with the interests of their users rather than just their own advantage.

2.6. Flow Experience

Flow experience describes the feelings of people when they are actually involved in an activity (Csikszentmihalyi & Csikszentmihalyi, 1988). Characteristics of flow experience are:

- Seamless sequence of responses facilitated by mechanical interactivity;
- Intrinsic pleasure;
- Loss of self-awareness, and
- Self-reinforcement (Hoffman and Novak, 2000).

Flow experience is an optimal experience where user skills and challenges have exceeded the threshold value and achieved a fit (Finneran and Zhang, 2005). If the user's skills always outweigh the challenges, then the user feels bored. However, if the challenge exceeds the capabilities of the user then the user feels anxious. Conversely, when the skills and challenges are lower than the threshold value, the user feels apathetic. Therefore, the flow has been widely used in information systems and electronic commerce contexts, such as online purchases (Koufaris, 2002), online games (Hsu & Lu, 2004), www (Agarwal & Karahanna, 2000), online banking (Lee *et al* 2007) and the online travel community (Wang et al, 2003, 2005). They argue that online user behavior is significantly influenced by flow experience.

Since flow is an elusive and broad concept (Hoffman & Novak, 2000), existing research has no universal view of its components. One point of view is thought to be the flow of experience being unidimensional and measuring with three items (Novak *et al.*, 2000). However, from some of the most studies arguing that the flow of experience is a concept consisting of several dimensions among them is Koufaris (2002). He noted that the online experience includes a three-dimensional flow, namely; pleasure, perception of control and focus of attention. In addition, other factors such as curiosity, interest (Wang *et al,* 2003), time transformation (Guo & Klein, 2009) and immersion (Agarwal & Karahanna, 2000) were also found as a flow component of experience. However, the three factors proposed by Koufaris (2002) are the most commonly used dimensions to measure the flow of experience in previous studies (see: Finneran & Zhang, 2005). Therefore, this study adopted three factors (pleasure, perceived control perception and focus of attention) as the dimension of the flow of experience. The understanding of each of these factors can be briefly described as follows;

Pleasure is something that is considered to reflect the enjoyment and pleasure of the user when they use the phone. Users adopt smartphones for information and entertainment such as playing games and more. Perceived pleasure is considered to be intrinsic motivation, compared to extrinsic motivations such as perceived usefulness (Davis *et al.,* 1992).

Perceived control reflects user control over activities and the surrounding environment (Koufaris, 2002). If users have relatively high self-efficacy or they are familiar with smartphones, they will have high perceived control.

Focus of attention reflects the effort required by the user during the engagement with the smartphone. For example, the user often listens to music while using the phone, therefore he should be able to do that while maintaining the focus of attention on other activities on the phone (such as chat), as this is a prerequisite for gaining experience flow.

2.7. Loyalty

Many researches in the last two decades have examined the various definitions of loyalty (Joacoby & Chestnut, 1978). They argue that there must be a strong commitment to an attitude of brand loyalty (Joacoby & Chestnut, 1978). It is a form of a consistent belief to feel benefited by buying a brand. It means, if consumer believes that the brand has the desired attribute, then they will have a more favorable attitude towards it. This attitude can then be measured by asking similar opinions to some people about what brand they like, and whether they feel committed to recommending this to others. Thus, the force of attitude is in turn considered by many researchers as a key predictor of brand purchases and patronage of repeat purchase or loyalty (Donio et al., 2006). Here are a number of hypotheses that may be proposed to explore the relationship between several variables that affect the loyalty of smartphone brand users in Indonesia.

2.8. Hypothesis

2.8.1. Relationship between Information Quality and System Quality on Trust and Flow Experience

Good information quality and system quality demonstrate the ability of service providers to have high integrity, and a satisfactory virtue in building trust of mobile service users. In this case, mobile service providers certainly need to invest a lot through various existing resources, in order to provide system and information of high quality. Thus the quality system and the quality of information will act as a signal in building the influence of user trust.

Many studies have found the effect of information quality and system quality on user satisfaction and trust (see: Song & Zahedi, 2007). Recently, Vance *et al.* (2008) find quality system (including navigation structures and visual appeal) affects user confidence in mobile commerce technologies. While Nicolaou & McKnight (2006) note that the quality of information affects the confidence beliefs among organizations of data exchange. In addition, both the quality of the system and the quality of information also affect the user experience in terms of enjoying, feeling and bringing about the focus of attention. For example, if one of the mobile brands has a platform that is unreliable and has a slow response, then users will need to wait a long time to receive information and services. While in certain conditions, the service may be suddenly interrupted. This event certainly will seriously affect the user experience, including in terms of enjoyment and focus of attention. They may also feel that they have no control over the phone and are low on the quality of the system and the quality of information provided. Therefore, in relation to such conditions, the study proposed the first, second, third and fourth hypothesis as follows;

- H-1. Information quality of the smartphone brand significantly influences trust
- H-2. Information quality of smartphone brand significantly influences flow experience
- H-3. System quality of smartphone brand significantly influences trust, and
- H-4. System quality of the smartphone brand significantly influences flow experience

2.8.2. Relationship between Trust and Flow Experience on Loyalty

An attempts to reflecting the level of trust or belief of mobile phone users into the integrity of the capabilities and benefits of their service providers, further contributes to their experience, if they expect to have a positive future experience (see: Kim *et al*., 2009). Additionally, when users trust the service provider, they will reduce the effort spent on monitoring service providers (Gefen *et al.,* 2003). This will increase their perceived control, so the influence of trust on this flow experience seems to have been supported by some previous research. Among other things, Wang et al, 2003 (2005) found the level of trust is quite influential on the user's flow experience of the online travel community. While Lee *et al.* (2007) noted that the trust of offline banking users is also quite influential on the flow experience when they use online banking. Thus, on the basis of such a phenomenon the fifth hypothesis which can be argued is:

- H-5. Trust has a significant influence in improving the flow experience of smartphone brand users.

Although the consequences of the relationship between trust and loyalty in business-to-customer appear to be fairly well established, but the construct of trust itself has been used in somewhat different ways (Ranaweera & Prabhu, 2003). For example, trust (in this case along with guarantees) has been applied as a service quality construct. Therefore, Gremler *et al.* (2001) proposed that trust must be used as a conceptual antecedent of customer loyalty.

Along with this, trust and flow experience also investigated has affected the loyalty of users on mobile phones (Ng & Kwahk, 2010). On the one hand, trust has reduced the risk of perceived use of consumers while on the other hand it also helping to promote the continued use of their loyalty, thus Gupta & Kabadayi (2010) highlights that trust instead of affecting loyalty, the flow experience also represents variable which can increase user loyalty. In addition, Koufaris (2002) also found that perceived pleasure affects the intention of online consumers to visit the site. Furthermore, Hausman & Siekpe (2009) notes that a flow consisting of challenge, concentration, control and enjoyment also tends to affect the intentions of an online consumer's purchase. On the basis of such indications, then the next hypothesis that can be put forward is;

- H-6. Trust has a significant influence in improving the customer loyalty of smartphone brand users,
- H-7. Flow experience also has a significant influence in improving the customer loyalty of smartphone brand users, and
- H-8. The Smartphone brand moderates the effect of information quality and system quality on smartphone user loyalty through trust and experience flow.

2.9. Research Model

Based on the results of theoretical review and the study on some previous researches, then in order to provide an illustration of the proposed hypothesis can be described a design of thought framework as shown in the model below.

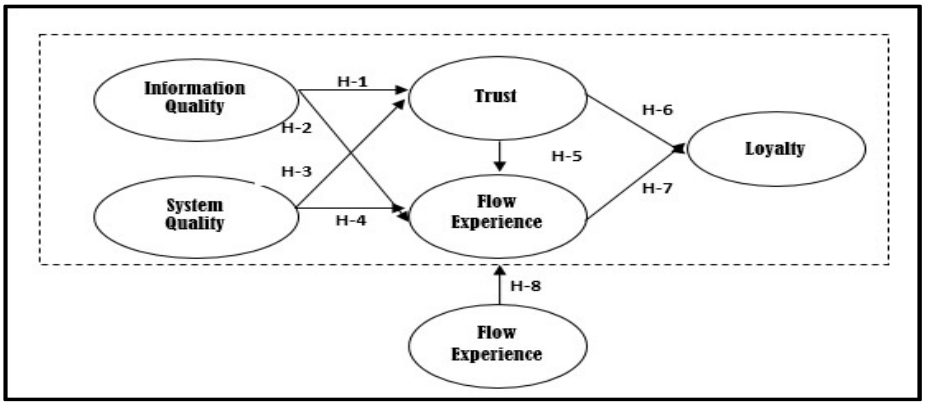

Figure 1: Relationship among Information Quality, System Quality, Trust and Flow Experience on Brand Loyalty of Smartphone Users

This model is a replication of earlier studies: as a further research of Zhou, et al (2010). This research model consists of 5 observation variables that were used to explain the process of customer loyalty formation with the implementation of information quality and system quality. This model aims to examine the relationship of information quality influence on trust (H1) and on flow experience (H2), the influence of system quality on trust (H3) and on flow experience (H4), the influence of trust on flow experience (H5), and influence of trust on customer loyalty (H6), as well as the influence of flow experience on customer loyalty (H7), and the smartphone brands that have different moderation influences on smartphone user loyalty (H8).

3. Research Method

Research method used in this study is explanatory survey. Singarimbun & Effendy (2006), defines this kind of survey as a conclusive method that aims to explain the causal relationship between independent variables and dependent variable of an observed phenomena. Based on this method it is expected that observed phenomena can be clearly more understood and predicted.

The total samples analyzed were 150 respondents. Each consists of 50 smartphone users branded Oppo, Samsung, and Xiaomi. All of these respondents are essentially people who have used or familiar with using the three brands of that smartphones.

The data were collected by using a questionnaire containing questions about the following variables:

Information quality:Its questions are directed to reflects the accuracy, completeness and timeliness of information provided by the service provider (Nelson & Todd, 2005). The indicator for disclosing this information quality is comprised of; 1) information in accordance with what the consumer needs, 2) the information is accurate, 3) the information is also up-to-date, and 4) the information is quite comprehensive.

System quality: This variable depicts reliability, response speed and ease of use of SNS mobile platform (Nelson and Todd, 2005). The indicators used to measure system quality are: 1) the mobile system is reliable; 2) can provide a quick response; 3) easy to use; and 4) has a facility of navigation function.

Loyalty, according to Zeithaml *et al* (1996) is referring to the tendency of consumers to constantly use a certain product or brand network over time (see also: Knox & Denison, 2000). The indicators to uncover these loyalty variables are: 1) continuous use (will continue to use); 2) would recommend to other mobile users; and 3) is the first choice phone.

Trust, is an important catalyst in building relationships that are transactional. For example, in the marketing literature of trust-commitment relationships, this variable has been conceptualized as one of the parties who have confidence in the reliability and integrity of business partners (Ranaweera & Prabhu, 2003). The indicators used to measure these variables are: 1) complete application and capabilities; 2) specifications in accordance with what is promised (promo / brochure); and 3) prioritizing the interests of consumers / customers / users.

Flow experience. Experience flow describes the feelings of people when they are actually involved in an activity (Csikszentmihalyi & Csikszentmihalyi, 1988). Flow experience is measured by 3 dimensions with 9 items of statement, namely: (1) perceived enjoyment (consisting of: (a) giving joy to the user, (b) giving fun to the user, (c) giving pleasure, and (d) very interesting); (2) perceived control (consisting of: (a) providing calm for the user, and (b) providing control for the user); and dimensions to (3) attention focus (consisting of: (a) absorbing user activity, (b) focusing attention on mobile, and (c) preoccupation with the application). The indicators of each of the above-mentioned variables are all measured using a 7-point Likert scale (1 = strongly disagree, up to 7 = strongly agree).

Brand is variable of group or moderation variable in this research, that is;

- 1 = Oppo branded smartphone user group
- 2 = Samsung smartphone brand user group
- 3 = Xiaomi smartphone user group.

4. Discussion and Result

Hypothesis test was done by using SPSS program. Similarly for testing the quality of research instruments (validity, reliability, and One-Way Anova), while for the structural model used assistance program AMOS version 21.0 for windows. The results of the study can be described as follows:

Variable	Indicator	Correlation	Cronbach Alpha
Information Quality	IQ1	0,671	0,836
	IQ2	0,708	
	IQ3	0,691	
	IQ4	0,601	
Flow Experience	PE1	0,839	0,826
	PE2	0,820	
	PE3	0,825	
	PE4	0,800	
	PC1	0,912	0,764
	PC2	0,857	
	AF1	0,874	0,726
	AF2	0,867	
	AF3	0,744	
System Quality	SQ1	0,831	0,808
	SQ2	0,743	
	SQ3	0,721	
	SQ4	0,734	
Trust	TR1	0,754	0,851
	TR2	0,762	
	TR3	0,651	
Loyalty	LOY1	0,724	0,852
	LOY2	0,764	
	LOY3	0,682	

Table 1: Test Result of Validity and Reliability

Table 1 show that each item in each variable or dimension is valid because it has a loading value > 0.5. Cronbach Alpha value of each variable > 0.60. Associated with Nunnally criterion, (1960), then all the variables are declared reliable.

Index Model of Goodness of Fit	Cut-off Value	Model Results
Chi Square	expected small	196,423
Probabilitas Chi Square (p)	≥ 0,05	0,081
CMIN/DF	≤ 2,00	1,155
Goodness of fit index (GFI)	≥ 0,90	0,902
Comparative fit index (CFI)	≥ 0,95	0,986
Tucker-Lewis Index (TLI)	≥ 0,95	0,978
Root mean square error approximation (RMSEA)	≤ 0,08	0,032

Table 2: Evaluation of Goodness-of-Fit Indices

The Goodness of Fit test on the summary of table 2 shows that the model has a good FIT.

The Relationship of Variables			Estimate	S.E.	C.R.	P	Remarks
TRUST	←	INFQ	,316	,092	3,423	***	Significant
FLOW EXP	←	INFQ	,085	,072	1,181	,238	No Significant
TRUST	←	SYSQ	,506	,123	4,115	***	Significant
FLOW EXP	←	SYSQ	,379	,113	3,347	***	Significant
FLOW EXP	←	TRUST	,317	,103	3,068	,002	Significant
LOYALTY	←	TRUST	,267	,124	2,153	,031	Significant
LOYALTY	←	FLOW EXP	,426	,156	2,740	,006	Significant

Table 3: Results of Structural Testing On All Smartphone Brands

Implementation of the analysis results of the model used can be seen completely in the picture below:

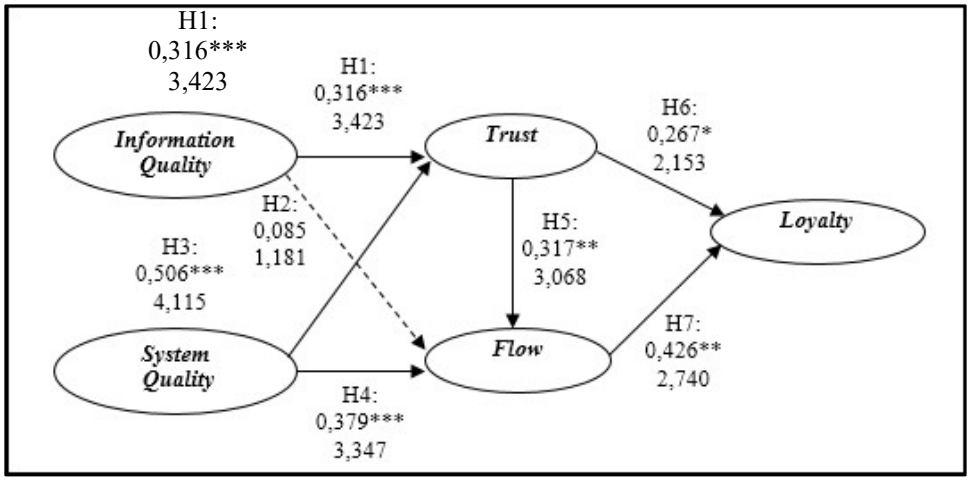

Figure 2
*Notation: * = Influence on the 0,05 level of significance;*
*** = Influence on the 0,01 level of significance;*
**** = Influence on the 0,001 level of significance*

Based on the results of causality testing as summarized in table 3, it is obtained clarity that the information quality has a positive and significant effect on trust, with the estimate of 0.316, C.R = 3.423, and probability value of 0.000 < 0.05. This suggests that the hypothesis H1 that states the information quality has a positive effect on the level of trust is proven.

On the other hand, it is identified that information quality do not positively and significantly affect flow experience, with estimate values of 0.085, C.R = 1.181, and a probability = 0.238 > 0.05. This suggests that the hypothesis H2 which states the information quality has a positive impact on the flow of experience is not proven.

Furthermore, the test results also indicate system quality has a positive and significant impact on the trust, with the estimate value of 0.506, C.R = 4.115, and the probability value of 0.000 < 0.05. This suggests that the hypothesis H3 which states the quality of system has a positive effect on the level of trust proved to be accepted.

Similarly, the results of causality testing as summarized in Table 3 also describe that the quality system has a positive and significant effect on the flow experience, with estimate values of 0.379, C.R = 3.347, and probability values of 0.000 <0.05. This suggests that the hypothesis H4 which states the quality system has a positive impact on the flow of experience is proven (accepted).

In addition, the result of further test shows that trust has a positive and significant impact on the flow experience, with estimate of 0.317, C.R = 3.068, and a probability value of 0.002 <0.05. This suggests that the hypothesis H5 which expresses trust has a positive effect on the level of flow experience proved acceptable.

Furthermore, the similar finding is also illustrated by the results of the tests in Table 3 which indicate that trust has a positive and significant effect on loyalty, with estimate values of 0.267, C.R = 2.153, and a probability value of 0.031 < 0.05. This suggests that the hypothesis H6 expressing trust has a positive impact on loyalty proven (accepted).

Similarly, the test results prove that flow experience has a positive and significant impact on loyalty, with estimate values of 0.426, C.R = 2.740, and the probability value of 0.006 < 0.05. This suggests that the hypothesis H7 which expresses the flow experience has an effect on loyalty is proven (acceptable).

Finally, based on structural testing of smartphone brands as a moderation variable obtained an indication that each group of smartphone users have different results. At the smartphone users of Oppo only trust that has a significant influence on the flow of experience, while relationships among other variables do not have a significant effect on the users of Oppo smartphones. While on the other hand, Samsung brand smartphone users consider the information quality as critical in building their trust level, and that level of trust can significantly affect their loyalty in using Samsung smartphones. Trust can mediate the perception of Samsung users on the relationship of information quality in influencing their level of loyalty as a full mediation.

The Relationship of Variables			Oppo		Samsung		Xiaomi	
			β	.Sig (p)	β	.Sig (p)	β	.Sig (p)
TRUST	←	INFQ	,241	,267	,571	,041	,306	,027
TRUST	←	SYSQ	,484	,137	,304	,065	,515	,003
FLOW	←	INFQ	,244	,070	,300	,206	-,034	,741
FLOW	←	TRUST	,347	,045	,250	,193	,279	,044
FLOW	←	SYSQ	,104	,562	-,162	,217	,717	***
LOYALTY	←	TRUST	-,388	,180	,836	***	,258	,012
LOYALTY	←	FLOW	,704	,105	,276	,437	,487	***

Table 4: The Result of Structure Test on Oppo, Samsung and Xiaomi Smartphone

Furthermore, the results of analysis in Table 4 indicate Xiaomi branded smartphone has much better results than the other two smartphones (Oppo and Samsung). The information quality and quality system provided by the Xiaomi smartphone can affect the user's trust level. Similarly, trust and the flow experience also mediate information quality and quality system provided by Xiaomi's smartphone in increasing user loyalty, so in this case the Xiaomi smartphone is considered much better in providing services for the smartphone users. To complete the test results, and then further can be presented Anova One-Way test to strengthen the results that have been obtained.

(I) Brand	(J) Brand	Mean Difference (I-J)	Std. Error	Sig.
Oppo	Samsung	-,1740	,1160	,328
	Xiaomi	-,5500*	,1160	,000
Samsung	Oppo	,1740	,1160	,328
	Xiaomi	-,3760*	,1160	,006
Xiaomi	Oppo	,5500*	,1160	,000
	Samsung	,3760*	,1160	,006
F_{value} = 11,741 sig. = 0,000 (***)				

Table 5: The Result of Anova One-Way Test

Thus, based on the results of analysis as presented in Table 4 and Table 5, it proves that the role of brand variable is significant in moderating the effects of information quality and system quality on smartphone user loyalty through trust and flow experience, so the hypothesis H8 acceptable.

5. Conclusion

IDC research institute survey showed that Oppo smartphone is at the top of sales percentage in Indonesia. However, it cannot be used as a benchmark that smartphone users will not switch from Oppo smartphones. It's due to the findings of study indicates there is a dominance of loyal attitude on Xiaomi smartphone users

The shifting of Oppo dominance smartphone sales over Samsung can be caused by Oppo's smartphone is a new competitor in Indonesia, where the promotion by smartphone provider contributes to the buying interest of smartphone user.

The results show that, according to the respondent's perception, Xiaomi's smartphone is considered much better than both competitors (Oppo and Samsung). It imply in terms of information quality and system quality offered by Xiaomi smartphone is far superior compared to both competitors in the eyes of users. Comparison of price and quality has an important role in shaping the perception of users. As it is known that the more sophisticated a gadget, it will tend to have a much higher level of vulnerability (such as: fast hot phones, dual-SIM smartphones have batteries that quickly wasteful, weaker signal strength, and so on).

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