

How the Quality of Technology-Enabled Payment and Information Search Systems Affects Customer Loyalty - The case in Indonesian Universal Health Coverage

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Computer systems have been proven to improve the performance of the organization. The influence of information technology (IT) also has impacted the way firms do business, not only improving process efficiency, but also data analyses, decision-making, customer acquisition and retention which lead to the improvement of organization sustainability. However, the implementation of new technology is not easy. Various studies have shown failure in the technology implementation. Based on Technology Acceptance Model (TAM), the quality of the system, which consists of perceived usefulness (POU) and perceived ease of use (PEOU), has been understood to influence customer satisfaction. However, there are still few studies that link system quality and customer loyalty. This study aimed to see the influence of system quality on customer loyalty. Using a descriptive quantitative method, this study was conducted on BPJS Kesehatan (Universal Health Coverage Program in Indonesia) members at 19 public and private hospitals in nine cities in Java, Indonesia. A six-point Likert scale questionnaire was designed and distributed. Four hundred and six samples collected were eligible for analysis using descriptive analysis and structural equation modelling with LISREL. The results show there is a positive relationship between system quality and customer loyalty. This study strengthens the body of evidence which showed the influence of POU and PEOU on customer loyalty.

Key words: *Customer loyalty, perceived ease of use, perceived of usefulness, TAM.*

Introduction

Technology introduction has the potential to transform firms. Information technology enables organizations to effect existing process with more speed, flexibility and efficiency and with broader access (Roca, Chiu, & Martínez, 2006). The implementation of IT also transforms the organization to do what they could not do before such as incorporate the use of the internet for business. Digital products and services have replaced organizers and the analogue clock. The use of email made the activity of sending tradition mail via a post office almost redundant.

The computer system has been proven to improve the performance of the organization. It influences the type of products and services they offer. It also has impacted the process within the company (Navimipour & Soltani, 2016). It has been supporting the organization in planning, decision-making, and communication process. Internet technology has been used to engage with the target market, capture new customers, track their behaviour, and understand their needs quickly and accurately.

Technology enables firms to customize communication and offers. The company can collect and analyse information from the customer to decide on marketing and communication policy through many types of information technology. Peled (1987) in Navimipour & Soltani (2016) reported that the power of computer technology continues to improve tenfold each decade. It makes technology more sophisticated and economically feasible. However, the implementation of technology will not be useful if the users are unwilling to use available technology which, when used, generates significant performance improvement.

However, the implementation of new technology is not easy. Regardless of the investment firms make in technology advancement, there are many failures of technology adoption reported from the previous research. Based on Technology Acceptance Model (TAM), the quality of the system, which consists of perception of usefulness (POU) and perceived ease of use (PEOU) has been understood to influence customer satisfaction. However, there are still few studies that link the system quality and customer loyalty. This study aimed to see the influence of system quality on customer loyalty.

Literature Review

Technology acceptance Model

Technology Acceptance Model theory (TAM) is a theory of information system that models the acceptance and usage of technology by users. The model suggests when users are exposed with a new technology, there are factors which will influence user decision about

how and when regarding use. The factors are Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Davis, Bagozzi, & Warshaw, 1989). TAM, introduced by Davis (1985) is an adaptation of TRA specifically. TAM is rooted in TRA (Theory of Reasoned Action). “*TRA is widely studied model from social psychology which is concerned with the determinant of consciously intended behavior*” (Ajzen & Fishbein, 1977).

System Quality

IT has been widely used to improve productivity and performance. One of its important components that influences customer intention in adapting the technology is system quality (Calisir, Gumussoy, Bayraktaroglu, & Karaali, 2014; Liaw, 2008; Roca et al., 2006; Yang, Shao, Liu, & Liu, 2017a). System quality is defined as the integration of system functions and reliability of system operation based on user perception (Yang et al., 2017a). It involves system response time, reliability, convenience of access, system flexibility and system accessibility (Calisir, Gumussoy, et al., 2014). Sheldon (1997 in Roca et al., 2006) states that system quality involves system reliability, user interface consistency, ease of use, documentation quality and quality and maintainability of program.

Previous studies have shown that perceived system quality is known as antecedents of various variables such as satisfaction (Hsu, 2014; Roca et al., 2006), trust (Hsu, 2014), perceived ease of use (Calisir, Gumussoy, et al., 2014; Yang et al., 2017a) and behaviour intention directly or indirectly (Calisir, Gumussoy, et al., 2014; Hsu, 2014; Liaw, 2008; Yang et al., 2017a).

Customer Loyalty

Customer loyalty is a key factor in the consumer marketing community as it is an important component for long-term viability and sustainability (Su & Hsu, 2013). It is defined as “the customers’ willingness to continue patronizing a business over the long-term, purchasing and using its goods and services on a repeated and preferably exclusive basis, and voluntarily recommending the firm’s products to friends and associates” (Lovelock & Wirtz, 2011). Zeithaml, Berry, & Parasuraman (1996) suggest that “favorable behavioral intentions are associated with a service provider’s ability to get customers to: (a) say positive things about them, (b) recommend them to other customers, (c) remain loyal to them (i.e., repurchase from them), (d) spend more money with them, and (e) pay premium prices”. Pearson (1996) in Orel & Kara (2014) defines “customer loyalty as the mindset of customers who hold favorable attitudes toward a company, commit to repurchase the company product/service and recommend the product/service to others”. Customer loyalty is defined as a customer overall attachment or deep commitment to a product, service, brand or organization (Oliver, 2015).

Scholars argue that customer satisfaction is important antecedents of loyalty (Zeithaml, Berry, & Parasuraman, 1996; Kim, Vogt, & Knutson, 2015; Poujol, 2013; Lin & Wang, 2006). Commitment is understood as symbolic attachment to a product. It is an important condition for loyalty to exist. Commitment plays an important role in the value that a strong brand provides to its customers. Commitment is the highest level of relational bonding and is important for successful long-term relationships (Pan, Sheng, & Xie, 2012). Trust has been identified as a major driver of loyalty (Pan et al., 2012).

System and service quality are researched as antecedents of loyalty in the on-line business, further to satisfaction and trust (J. Kim, Jin, & Swinney, 2009). Lee, Moon, Jin, & Yi (2015) state that in the mobile industry usability, satisfaction and brand trust, all of them have positive influences on brand loyalty. The influence of satisfaction and trust to loyalty also are shown by the study of Taylor & Hunter (2015), besides attitude and resistance to change.

Material and Method

This study was a descriptive quantitative study. To test the hypotheses, a survey was conducted. Approximately 61 million members of BPJS Kesehatan (Indonesia Universal Health Coverage), mandiri members are the population of this study. A structured questionnaire was used as the test instrument. Data for statistical analysis was collected through a field survey in April-July 2018.

The survey was conducted on out-patients as respondents in 21 hospitals in nine cities in Java Island, Indonesia. The survey was designed to evaluate system quality and customer loyalty. Respondents were asked to self-rate system quality and customer loyalty to BPJS Kesehatan services. The method of sample collection was convenience sampling due to time and resource limitation. Seven hundred and ninety questionnaires were collected and analyzed.

Measures

Respondents rated agreement using a 6-point Likert Scale (from strongly disagree to strongly agree). A 6-point Likert Scale was chosen to omit mid-point social desirability bias.

Measurement of perceived system quality was used referring to indicators from Yang, Shao, Liu, & Liu (2017b), Calisir, Altin Gumussoy, Bayraktaroglu, & Karaali (2014) and Hsu (2014). Indicators involve system response time, reliability, convenience and accessibility.

Customer loyalty was measured using 5 indicators modified from Poujol, Siadou-martin, Vidal, & Pellat (2013) and (Lee et al., 2015). The questionnaire tested respondent evaluation

on customer loyalty with regard to continuance, contribution, recognition, sharing positive news and support of the program.

Data analysis

Data from returned questionnaire was compiled and analyzed. Data analysis used SEM with LISREL. A two-step approach was used. First, measurement model analysis ensured that all indicators or observed variables used were valid and reliable. After measurement model were concluded to be valid and reliable, the next step from the two-step approach was conducted: a structural model analysis which included a) Overall Model Fit Test and b) Analysis/Significant Test on the relationship between 2 latent variables in the model

Result and Discussion

Of 790 respondents 52% was female and 48% was male. Sixty-six percent of respondents had income more than 3million per month, or were of a middle income and up. Forty-one percent had college degree.

Table 1 below shows that all indicators of perceived system quality are valid and reliable. They meet criteria t-value, SFL, VE and CR. However, for variable customer loyalty, since the indicator is more than $SFL < 0.5$, therefore it should be omitted. After recalculation, as shown in Table 1, all remaining variables of loyalty met reliability and validity criteria.

For structural analysis, the result of path coefficient analysis showed that both coefficient and t-value of correlation between perceived system quality and customer loyalty are 0.33 and 9,99 respectively (see Figure 1 below). Therefore, it can be concluded that that perceived system quality positively influences customer relationship.

System quality is defined as the integration of system functions and reliability of system operation based on the perception of users (Yang et al., 2017a). It involves system response time, reliability, convenience of access, system flexibility and system accessibility (Calisir, Gumussoy, et al., 2014). Perceived system quality in this study is how customer perceived the ease of use and usefulness of the supporting system of BPJS Kesehatan.

This study confirms the relationship reported by Calisir, Gumussoy, et al. (2014) and Liaw (2008) which show that perceived of usefulness of the system influence behaviour intention to contribute using the system. This study shows that perceived of system quality (usefulness and ease of use) positively influences loyalty.

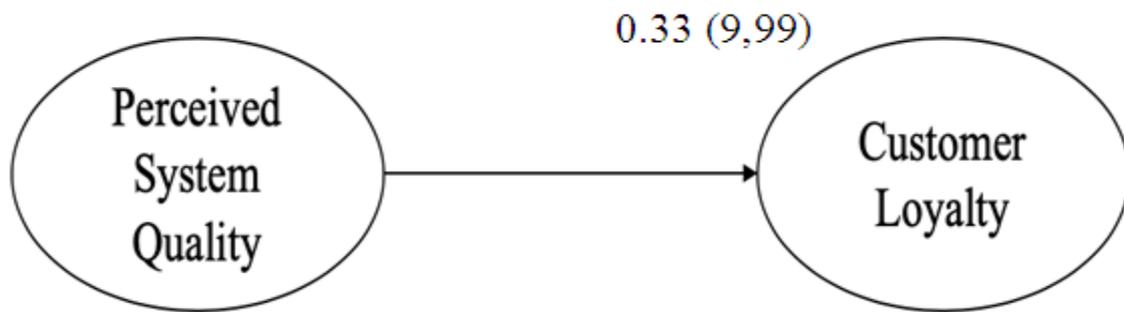
The difficulty in accessing systemic or support systems will cause customer resentment, anger and ignorance. Previous studies showed that poor support system quality not only affects satisfaction but also has a direct effect on loyalty. Difficulty to access the status of the payment will make BPJS member confused and unaware as to whether they have paid this month's instalment or not. Monthly instalment value is relatively small. Most of the time people will pay for several months and they do not record the payment. If they cannot track the payment status easily, they will miss making payment. This will lead to lower collection rate of BPJS Kesehatan. Improving the supporting system where a customer can check the payment status easily will help to improve collection rate. Moreover, if there is a payment reminder system, an easier payment process will also improve willingness of customers to regularly pay the insurance premium.

Table 1: Measurement Model Analysis

Item	SFL	t-Value	CR	VE
Perceived System Quality			0,060	0,040
Support system is useful	0,040	0,047		
Information from support system is reliable	0,051	0,033		
Support system is easy to access the payment system	0,054	0,027		
Support system is easy to navigate	0,062	0,014		
Easy to access support system	0,056	0,024		
Customer Loyalty			0,058	0,040
Continue to pay	0,042	0,044		
Pay more	***	***		
Remind other	0,056	0,024		
Share positive news	0,060	0,017		
Support the program	0,051	0,032		

The result of the study showed that customer perception of the quality of the system support is the most important factor in influencing loyalty. The perceived ease of use and perceived usefulness of the system support are considered key in ensuring quality. In the era of high use of technology, nowadays, customers depend on more from the system to find information, to check the status and to complain. Having a perceived good support system will increase convenience which will lead to higher switching cost, avoid resentment, anger and ignorance and at the end will increase customer loyalty.

Figure 1. Framework Model



Conclusion

Information technology has enabled organizations to conduct existing processes faster and with more flexibility and efficiency and broader access. This has been proven to improve the performance of the organization. However, the implementation of new technology is not easy and regardless of the investment that firms make in technology advancement, many failures of technology adoption have been reported in the previous research.

System Quality which includes perception of usefulness (POU) and perceived ease of use (PEOU), have been understood to influence customer satisfaction and customer loyalty directly and or indirectly. This study has confirmed that system quality indeed positively influences customer loyalty. The fact that perceived system quality positively influences loyalty can be argued such that ensuring that the IT system implemented by the firms should be easily accessible, easily used and perceived as useful. With these condition, customers will stay with the company for long-term business. This study has strengthened the body of evidence of TAM in the healthcare industry. This study can be also the source of evidence of the organization to ensure the usefulness and ease of technology implementation for successful adaptation. The limitation of the study is that this study was not designed with a mixed methodology. Future research could be conducted with a mixed methodology to understand better customer perception, identify problems and gain input for enhanced improvement of IT system implementation.

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