The Effect of Technology Acceptance Model and E-service Quality on Customer Trust and Implications on Consumer Loyalty of Kai Access Users

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Abstract

The Covid-19 pandemic forced the transportation sector to go online which eventually resulted in a high economic downturn. PT. Kereta Api Indonesia (Persero), as a leading state-owned transportation company continues evaluating its services in order to deliver a priority service that are expected to be able to produce priority improvements in the future, therefore PT. KAI (Persero) carries out a communication strategy to find out mutual information feedback from consumers because communication is a tool for interacting and exchanging information with one another. To support Indonesian government’s social distancing policy, PT. KAI issues a new policy on social distancing practice and non-cash payment, ultimately aiming at minimizing the viral spread. In this regard, the strategy is to form the Technology Acceptance application feature to create customer trust, which in turn will develop KAI customers’ loyalty. This study recruited 100 train passengers in the company’s operating region 2 as participants. PLS-SEM was applied to analyze the data, showing that perceived usefulness, perceived ease of use and e-service quality significantly affected consumer trust. While perceived usefulness was found to not affect the customer loyalty, the perceived ease of use, e-service quality, and consumer trust exhibited significant, positive effect on consumer loyalty.

Keywords: Perceived usefulness, perceived ease of use, e-service quality, consumer trust, consumer loyalty

Introduction

The impact of the pandemic is extraordinary, with the implementation of large-scale social restrictions, the number of daily train passengers significantly drops. The Covid-19 pandemic, as a relatively new disease, has lead to collapses in number of the train passengers. The acceleration of economic recovery due to the Covid-19 pandemic is a urgently necessary. In this regard, strategic steps and decisions are pivotal. To survive this difficult condition, government, state-owned companies, private companies, and micro, small, and medium-scale business work together to restore the country’s economy. During this time, business resilience, i.e., business adaptability to rapid changes, plays pivotal roles. This term also describes how businesses can survive the crisis situation and quickly recover when the crisis ends. PT. KAI is known to face very difficult time since the transportation sector is one of the most affected sector.
KAI is clearly directly affected by globally-spreading virus. Despite the difficulties, KAI management took the best measures exhibit the commitment to serve and protect its employees and customers while maintaining the company's business continuity. KAI equips its employees with health facilities such as facemasks, hand gloves, face shields, and hand sanitizers, especially for frontliners or those directly contact with customers. An adequately-protected employees are the key to obtain the customers’ trust in the safety and health of the service. In addition to providing protection for one of its assets (i.e., employees), KAI is also committed to protect its customers by exercising the health protocols regulated by government Covid Task Force, the Ministry of Health, and from the Ministry of Transportation. “We will continue to adapt and adhere to the regulation, regardless of its impact on PT.KAI. This effort mainly aims to protect the customer when using the rail transportation service.”

Kolonia and Soepeno (2019) state that customers who feel safe are likely to trust the service provider. Eid (2011) argues that customer trust will lead to loyalty, and loyal customers will continue to use the services. PT KAI in creating customer loyalty by increasing customer trust through an application called the Technology Acceptance Model (TAM). This application is expected to be able to protect customers from the spread of the covid-19 virus by reducing interactions with customers.

Rail transportation is among the customers’ preferred mode of transportation. PT. KAI is a company applying e-service quality, as shown by its online ticketing facility aiming at providing an effective and efficient service for public. Through Online ticketing system, public can easily book a ticket 24/7, anytime, anywhere. The company’s website (www-kereta-api.co.id) also allows customers to book tickets online. The company’s application, KAI Access, even offers easier ticket booking from customers mobile device, in addition to directly buying at Indomaret, Alfamart, Post Office, and many other authorized agents.

Kereta Api Indonesia Access (KAI Access) is a train ticket booking application developed and published by PT Kereta Api Indonesia since 2013. It is the official application from PT KAI, and was released to meet the needs of passengers for long, medium, and long-distance trains, as well as local/commuter train. KAI Access is an application that continues to experience changes and service updates to facilitate all types of transactions in it. This study aims to analyze perceived usefulness, perceived ease of use, and e-service quality from the application of the Technology Acceptance Model to customer trust and its implications for customer loyalty at PT. KAI.

Literature Review

Technology Acceptance Model

Wibowo (2006) states that the Technology Acceptance Model (TAM) is a model built to analyze and understand the factors that influence the acceptance of the use of the technology. Technology Acceptance Model (TAM) clearly illustrates that usage acceptance of information technology is influenced by perceptions of use and ease of use. Jogiyanto (2007), in his book, states that the Technology Acceptance Model (TAM) is a model that explains behavioral intention and behavior, which are two different things; the behavioral intention is still just an
intention. The intention is defined as the desire to perform a behavior. In contrast, behavior is a real action or activity carried out. Therefore, the behavior will be carried out if someone is interested in doing so, and behavioral interest will determine his behavior, while interests can change at any time.

**Perceived Usefulness**

Wallace et al. (2014) state that perceived usefulness describes a person's level of belief in using a technology in which the technology can maximize their work. The perception of ease of use put forward by Nasri and Charfeddine (2012) describes a person's level of belief in using a technology that can reduce their mental and physical burden. Perceived usefulness is defined as the extent to which a person believes that using technology will improve their job performance. Perceived usefulness of usability is the degree to which a person thinks that using a system will improve performance. Shomad (2013) provides several indicators of the perceived usefulness of information systems, including overall useful for use, very valuable for users, helpful content for users, and functional sites.

**Perceived Ease of Use**

Perceived ease of use is a person's belief that the use of technology can be easily used and understood by Nasri and Charfeddine (2012). Perceived ease of use affects attitudes toward using the use of KAI Access. According to Davis (1989), understanding perception is the level where someone believes that the use of information technology is easy and does not require hard effort from the user. This concept includes the clarity of the purpose of using IT and the ease of using the system for the purposes according to the user's wishes. Shomad (2013) provides several indicators of perceived ease of use in information technology, including a clear and understandable site, does not require excessive effort, is easy to find the information needed, and is easy to use.

**E-Service Quality**

According to Kotler and Keller (2016), quality is the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs. According to Tjiptono (2014), the definition of service quality is: "The level of excellence expected and control over the level of excellence to meet customer desires." From the definition above, service quality is the overall characteristics and nature of every action or performance offered by a party to another party that cannot be seen, affecting its ability to satisfy stated or implied needs and desires. Zeithaml and Bitner (1996) define e-service quality as "the degree to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services." E-service quality can simply be defined as the quality of electronic media services. (Lasyyaka, 2015). Parasuraman et al. (2005) mention e-SQ (electronic service quality) as the extent to which a Web site facilitates efficient and effective shopping, purchasing, and delivering.

Parasuraman, Zeithal & Malhotra (2005) state that there are four dimensions in the quality of electronic services, which four dimensions are the core quality of electronic services, including (1) efficiency, which is the ability of customers to access websites, search for desired products and information related to these products, and leave the site in question with minimal effort, (2)
fulfillment which is the actual performance of the company in contrast to what is promised through the website, including the accuracy of service promises, such as product stock availability and product delivery in accordance with the promised time. (3) system availability is the technical functionality of the site concerned, functioning correctly, and (4) privacy guarantees security and the company's ability to maintain customer data integrity.

Customer Trust
Trust is the willingness of consumers to trust the company in providing products and services (Moorman, Deshpande, and Zaltman, 1993). Trust is one of the most critical factors in a seller-customer relationship and is an essential element of a business relationship's strength. Trust is essential for maintaining a long-term relationship. Morgan and Hunt (1994) define trust as a party's trust in another party because of the honesty and reliability of the other party. Patrick (2002) views customer trust as thoughts, feelings, emotions, or behaviors that manifest when customers feel that the provider can be relied on to provide the best service.

Trust is a basis for consumers to make purchases of an item offered by the seller (Green, 2006). Consumers' trust can be built through the statements and services provided. Furthermore, Green (2006) states that the product provided has the required character. The seller can solve the consumers' problems, the seller can become a partner in doing business, and the company has people who consumers can trust. According to Green (2006), Indicators of customer trust are (1) Credibility, which is related to the words we say or give to customers. (2) reliability; it is related to the actions given to consumers, (3) intimacy, which refers to the safety or security that consumers feel by the services provided by the company; and (4) self-orientation, which refers to the goals or intentions of the self-consumer.

Customer Loyalty
According to Kotler and Keller (2016), loyalty is a deeply held commitment to buy or re-support a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause customers to switch. Customers are value maximizers; they form value expectations and act on those values. Customer Loyalty defined by Griffin (2002), is the purchase of several customer units of products or services over time. Loyalty dimensions are: make regular purchases, purchase product lines and services, refer others, and don't switch to competitors' products.

Hypothesis Development
According to Wallace et al. (2014), perceived usefulness describes a person's level of belief in using a technology in which the technology can maximize their work. Customers who view the ease of using technology for service will maintain that trust. In providing the best service, the perceived usefulness formed because they have used the products and services. Giving the best service will arise the customer. Therefore, customer trust will continue to use their products and services. This has been proven by Tang, Tsai, and Wu (2005); Al Sharafi, Arshah, Abu Shahab, and Elayah (2016); Al Sharafi, Arshah, Herzallah and Alajmi (2017); Yudiarti and Puspaningrum (2018); and Larasetiati and Ali (2019) which found that perceived usefulness had a significant positive effect on customer trust. Based on this description, this study proposes a second hypothesis, namely:

H1: Perceived usefulness has a positive effect on consumer trust.
Nasri and Charfeddine (2012) state that perceived ease of use is a person's belief that the use of technology can be easily used and understood. Customers who view the ease of using technology for service will maintain that trust in providing the best service. The perceived ease of use is formed because they have used products and services and given the best service, customers will trust to continue using the product and services. This has been proven by Tang, Tsai, and Wu (2005); Al Sharafi, Arshah, Herzallah and Alajmi (2017); Yudiarti and Puspaningrum (2018); Amin, Rezaei, Abolghasemi (2014); and Al Ashgar and Nurlatifah (2020) who found that perceived ease of use had a significant positive effect on customer trust. Based on this description, this study proposes a second hypothesis, namely:

H2: Perceived ease of use has a positive effect on consumer trust

Zeithaml (2014) defines e-service quality as "the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services. Customers who have views about the ease of obtaining services will maintain the trust that the company will provide the best service. At the same time, e-service quality formed because they have used products and services. Giving the best service will arise in the customer's trust to continue using their products and services. This has been proven by Boonlertvanich (2018); Menges and Yuanqiong (2019); Rizan, Haro and Rahmadina (2019); and Akbar, Tbrari, and Kusuma (2019), who found that e-service quality had a significant positive effect on customer trust. Based on this description, this study proposes a second hypothesis, namely:

H3: E-service quality affects customer trust

Winnie Poh-Ming Wong et al. (2014) empirical results indicated that perceived usefulness and perceived ease of use positively impacted customer e-loyalty. Several implications, limitations of the study, and recommendations for future research are outlined. Based on this description, this study proposes the following hypotheses, namely:

H4: Perceived usefulness positively affects consumer loyalty
H5: Perceived ease of use has a positive effect on consumer loyalty

Karyose et al. (2017) say that E-service quality positively affects customer loyalty. When customers feel a good transaction experience, the level of loyalty will increase. E-Service quality has a positive effect on customer loyalty. Bramulya et al., (2016). Customers will be loyal because they are satisfied with the services provided. Based on this description, this study proposes a fifth hypothesis, namely:

H6: E-Service quality affects consumer loyalty

Customer trust is the willingness of consumers to trust the company in providing products and services (Moorman, Desphande, and Zaltman, 1993). Companies that gain customers' trust will maintain that trust in providing the best service. Customer trust formed because they have used products and services and given the best service will arise in customers' loyalty to continue using their products and services. This has been proven by Setiawan and Sayuti (2017); Ashraf, Ilyas, Intisaz, and Tohir (2017); Leninkumar (2017); and Megawati, Rofiaty, Hadiwidjoyo (2018), who found that customer trust had a significant positive effect on customer loyalty. Based on this description, this study proposes a sixth hypothesis, namely:
H7: Customer trust has a positive effect on consumer loyalty

Based on the concept of these variables, which will form the background for the formation of hypotheses and research framework:

![Diagram showing the research framework with variables: Perceived usefulness (X1), Perceived ease of use (X2), E-Service Quality (X3), Customer Trust (Y1), and Customer Loyalty (Y2).]

**Method**

The design of this research is explanatory research. This population of respondents was taken from passengers in DAOP 2 Bandung, West Java, considering the area as an operational train passenger transportation. Research data were collected using self-administered questionnaires through interviews and online surveys. Respondent participants had criteria for a minimum age of 17 years, considering their age could better understand the contents of the questionnaire and were included in the productive age. The number of respondents obtained in this study was 100 people from DAOP 2 Bandung, West Java.

Survey instruments and measurements

All variables were measured with several items adapted from the literature and modified to suit the context of public rail transport. Perceived usefulness and perceived ease of use are planned to use a 5-point Likert scale from previous research. Wong et al. (2014) Ashsifa (2020), E-service quality is planned to use a 5-point Likert scale from research (Lasyakka, 2015), while customer trust uses a 5-point Likert scale from previous research by Samuel and Green (2006). Meanwhile, customer loyalty also uses a 5-point Likert scale based on previous research by Kolonio and Soepeno (2019).

**Measurement**

There are two things to be analyzed at the outer model analysis stage; construct validity can be seen from the loading factor value with a rule of thumb greater than 0.5, which is considered valid. Based on the test results, the loading factor results obtained that all indicators in the model are said to be fit.
Tabel 1. Construct Validity and Reliability

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted [AVE]</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>0.779</td>
<td>0.850</td>
<td>0.535</td>
<td>Reliable</td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>0.784</td>
<td>0.861</td>
<td>0.612</td>
<td>Reliable</td>
</tr>
<tr>
<td>E-Service Quality</td>
<td>0.850</td>
<td>0.867</td>
<td>0.876</td>
<td>Reliable</td>
</tr>
<tr>
<td>Customer Trust</td>
<td>0.795</td>
<td>0.855</td>
<td>0.501</td>
<td>Reliable</td>
</tr>
<tr>
<td>Customer Loyalty</td>
<td>0.761</td>
<td>0.848</td>
<td>0.585</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: output results PLS, 2022

At the analysis stage of the outer model, two things will be analyzed; construct validity can be seen from the value of the loading factor with the rule of thumb greater than 0.5, which is considered. Based on the test results, the loading factor results obtained that all indicators in the model are said to be fit.

Table 2. Path Analysis Result

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Original Sample Estimate</th>
<th>Standard Deviation</th>
<th>t Statistic</th>
<th>P-Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness→ Customer Trust</td>
<td>0.460</td>
<td>0.067</td>
<td>6.855</td>
<td>0.000</td>
<td>H1 accepted</td>
</tr>
<tr>
<td>Perceived Ease Of Use→ Customer Trust</td>
<td>0.164</td>
<td>0.073</td>
<td>2.247</td>
<td>0.027</td>
<td>H2 accepted</td>
</tr>
<tr>
<td>E-Service Quality→ Customer Trust</td>
<td>0.394</td>
<td>0.085</td>
<td>4.660</td>
<td>0.000</td>
<td>H3 accepted</td>
</tr>
<tr>
<td>Perceived Usefulness→ Customer Loyalty</td>
<td>0.111</td>
<td>0.066</td>
<td>1.695</td>
<td>0.093</td>
<td>H4 rejected</td>
</tr>
<tr>
<td>Perceived Ease Of Use→ Customer Loyalty</td>
<td>0.173</td>
<td>0.073</td>
<td>2.367</td>
<td>0.020</td>
<td>H5 accepted</td>
</tr>
<tr>
<td>E-Service Quality→ Customer Loyalty</td>
<td>0.628</td>
<td>0.086</td>
<td>7.302</td>
<td>0.000</td>
<td>H6 accepted</td>
</tr>
<tr>
<td>Customer Trust→ Customer Loyalty</td>
<td>0.280</td>
<td>0.082</td>
<td>3.418</td>
<td>0.001</td>
<td>H7 accepted</td>
</tr>
</tbody>
</table>

Source: output results PLS, 2022

Table 2 shows the proposed hypothesis testing tested using structural equation modeling. The results of all hypotheses are accepted with t-count of more than 1.96 and significance below 0.05; except for hypothesis 4, perceived usefulness to customer loyalty with t-count of 1.695 and a significant 0.093. Customer trust is influenced by perceived usefulness, perceived ease of use, and e-service quality. Customer loyalty is influenced by perceived ease of use, e-service quality, and customer trust.

Discussion

The purpose of this study was to analyze the effect of perceived usefulness, perceived ease of use, and e-service quality on customer trust and customer loyalty. Perceived usefulness quality influences customer trust. The results of this study are supported by Tang, Tsai, and Wu (2005); Al Sharafi, Arshah, Abu Shahab, and Elayah (2016); Al Sharafi, Arshah, Herzallah and Alajmi (2017); Yudiarti and Puspaningrum (2018); and Larasetiati and Ali (2019) which found that
perceived usefulness had a significant positive effect on customer trust. Perceived ease of use and e-service quality have an influence on customer trust. The results of this study are supported by Tang, Tsai and Wu (2005); Al Sharafi, Arshah, Herzallah and Alajmi (2017); Yudiarti and Puspaningrum (2018); Amin, Rezaei, Abolghasemi (2014); Al Ashgar and Nurlatifah (2020), who found that perceived ease of use had a significant positive effect on customer trust. E-service quality influenced customer trust, which was supported by research results from Boonlertvanich (2018); Menges and Yuanqiong (2019); Rizan, Haro and Rahmadina (2019); Akbar, Tbrari, and Kusuma (2019), who found that e-service quality had a significant positive effect on customer trust. Perceived usefulness does not affect customer loyalty. Research that supports that perceived usefulness does not affect customer loyalty is Rinaldo et al., (2019). Perceived ease of use influences customer loyalty according to the results of research by Winnie Poh-Ming Wong et al. (2014), who found that perceived ease of use positively impacted customer loyalty. E-service quality influences customer loyalty which is supported by the results of research from Felicia Laurent (2016), which says that E-service quality has a positive effect on customer loyalty. Customer trust influences customer loyalty. The results of this study are supported by Setiawan and Sayuti (2017); and Sutanto and Djati (2017). Ashraf, Ilyas, Intisaz, and Tohir (2017); Leninkumar (2017); Megawati, Rofiaty, Hadiwidjoyo (2018) found that customer trust had a significant positive effect on customer loyalty.

**Limitation and future research**

Variables that affect customer loyalty in this study are limited to the independent variables perceived usefulness and ease of use, e-service quality, and intervening customer trust variables. Hence, future research needs to add several other relevant independent variables. This study is specifically for public transport railways in Indonesia with characteristics in terms of size and consequences of Covid 19. Therefore, the results cannot be generalized to other modes of public transportation due to country and cultural differences in dealing with Covid 19 handling.

**Conclusion**

The COVID-19 pandemic has resulted in a decline in all types of businesses, especially transportation and warehousing businesses. This study focuses on rail public transportation during the pandemic in Indonesian railway companies to determine the effect of risk perceptions about planned attitudes and behavior on intentions to travel by train. Customer trust is influenced by perceived usefulness and perceived ease of use, and e-service quality. Perceived usefulness does not affect customers. Train passengers who trust KAI access in providing services to facilitate service also feel loyal to PT. KAI provides security from the current COVID-19 outbreak based on applications issued to facilitate service and provide customer security in using train services during the pandemic.

**References**


