

CUSTOMER SERVICE VS SELF-SERVICE QUALITY EXPERIMENT: WHICH ONE IS A BETTER STRATEGY FOR AIRLINES IN INDONESIA

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ABSTRACT

Flight services are now carried out with officers ready to help consumers. Although ticket purchases and check-in can be done independently, many consumers still carry out the manual procedure with the officers' help. However, technological developments encourage changes in services provided by airlines, namely the transition of service from officer assistance to independent consumers. Self-service (SS) designed in the aviation industry starts from searching for information to pick-up and check baggage independently. Therefore, to generate intention to use, the factors of perceived usefulness, trust, perceived ease of use, and perceived benefits need to become the company's attention. An experiment was conducted by comparing the service from customer service (CS) to SS by involving 244 millennial participants. The data were analyzed using paired-sample t-test to see the difference between CS and SS, multiple regression to see the effect of the independent variable on the dependent, and SPSS process macro to see that the moderating variable can strengthen or weaken the relationship between the independent and dependent variables. In addition, validity and reliability tests done using Cronbach's alpha. The results showed that there was no difference between CS and SS in perceived usefulness (SS), perceived benefits (CS), and SS influence intention to use. Age only moderated the perceived benefits of intention to use in CS.

Keywords: Self-Service, Customer Service, Perceived Usefulness, Trust, Perceived Ease of Use, Perceived Benefit, Intention to Use.

INTRODUCTION

In service companies, especially air transportation, service quality is essential. Consumer service quality can shape customer satisfaction (Soelasih, 2015), which causes repurchase intention. The development of service quality also occurs in the airline service industry. Nadiri et al. (2008) mentioned the term air quality (AIRQUAL) with five different dimensions of service quality (SERVQUAL). However, the basis of AIRQUAL is SERVQUAL, which is modified in the aviation industry. Chang & Yeh (2002) in their research used service quality dimensions, namely on-board comfort, airline employees, reliability of service, the convenience of service, and handling of abnormal conditions. Rhoades & Waguespack (2008) used on-time performance, ticketing, refunds, fares, customer services, advertising, boarding, and baggage dimensions. In Hu & Burning (1978); Ritchie et al. (1980); Abraham (1983), the dimensions used in service quality include pre-journey, pre-flight, in-flight, and post-flight.

Liou et al. (2011) produced service quality dimensions, namely booking service, ticketing service, check-in, baggage handling, boarding processes, cabin service, baggage claims, and responsiveness. Soelasih (2015) stated that the dimensions of flight service quality produced are ticket information, ticketing, check-in, on-time performance, in-flight, and post-

flight.

Technological developments have led to changes in service quality that is the change from traditional service quality to e-service quality. The development of e-service quality started after 2000 (Yarimoglu, 2015). The dimensions used in e-service quality vary among researchers depending on the object under study. Loiacono et al. (2002) used informational fit-to-task dimensions, tailored communications, trust, response time, ease of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, online completeness, relative advantage, object with CDs, books, hotel, and airline reservations. Meanwhile, Park et al. (2007) used ease of use, information, security, responsiveness, and fulfillment in online travel agencies.

E-service quality is based on the technology acceptance model (TAM) theory developed by Davis in 1989 by adopting the theory of reasoned action (TRA). Service quality is based on TRA developed by Ajzen & Fishbein (1977). Technological development causes changes in consumer behavior. If companies do not change their business activities in selling products, the consumers may switch to other companies that are already using technology. Therefore, the industry adopts technology to give rise to e-commerce. According to the Ministry of Communication and Information, the growth of e-commerce in Indonesia reached 78% in 2019.

Airline companies are adopting technological developments in service quality. Service quality is used not traditionally but is combined with e-service quality. The passengers can see flight e-service quality in ticketing, ticketing, and check-in, which can be done online.

In this research, the traditional service quality in aviation is defined as the process of searching for ticket information, purchasing tickets, checking in, and checking in baggage, which are done manually with officers' help. The traditional service quality uses the term customer service (CS). Meanwhile, modern service quality in aviation is the process of searching for ticket information, purchasing tickets, check-in, and baggage, which are carried out independently because they are systemized with the company's technology. For modern service quality, the term used is self-service (SS).

This research seeks to analyze the changes from CS to SS made by airlines, since service changes affect perceived usefulness, trust, perceived ease of use, and perceived benefit on the intention to use. It aims to see the level of service change adoption from CS to SS moderated by age in airlines. Based on the aforementioned previous studies, there has not been any research used experimental method to compare CS and SS in aviation industry in Indonesia.

LITERATURE REVIEW

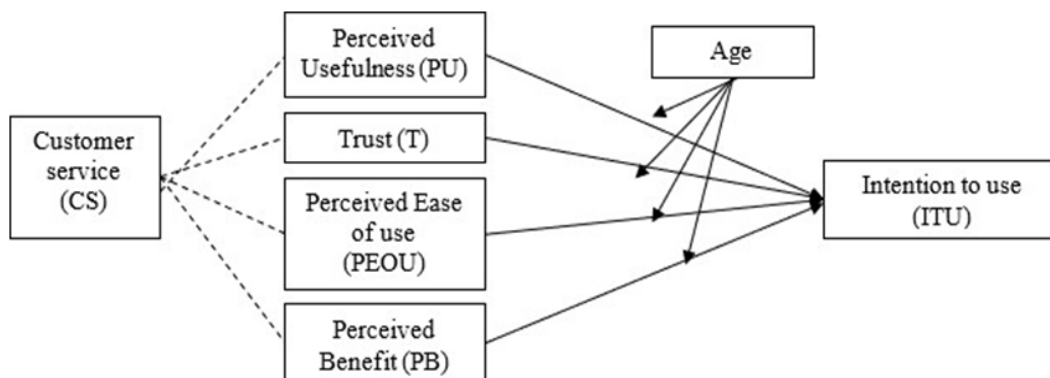
TRA developed by Ajzen & Fishbein in 1977 showed that attitude and subjective norm influence behavioral intention (Ajzen & Fishbein, 1977). Vallerand et al. (1992) developed TRA by examining the correlation between attitudinal and normative structures and a causal path from normative beliefs to attitudes. TRA development was carried out to clarify behavioral intention (Sheppard et al., 1988). Ajzen (1985), Madden et al. (1992) developed the Theory of Planned Behavior (TPB). Madden et al. (1992) looked at the difference between TRA and TPB. Their research results indicated that the perceived behavioral control variable had more influence on behavioral intention and behavior.

Technological developments led to the adjustment of TRA, thus developing TAM. Davis et al. (1989) began developing TAM by adopting TRA. TAM was defined as "*an individual's psychological state with regard to his or her voluntary or intended use of a particular technology*" (Hendrick & Brown, 1984). In Davis et al. (1989), the variables

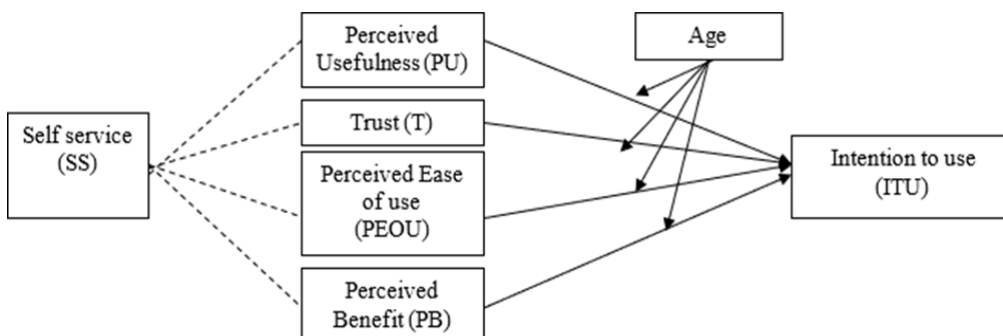
studied were external variables, perceived usefulness, perceived ease of use, attitude toward use, behavioral intention to use, and actual system use.

TAM’s use changes the service quality provided to consumers into e-service quality (Yarimoglu, 2015). Likewise, service quality on aviation has changed with the use of technology. The changes caused the flight process to become a mix of service quality and e-service quality. The use of technology attracts consumers as it eases the flight process. Consumers serve themselves in the flight process, thus the system must make it easier for them.

Changes in technology lead to changes in service, and then consumer behavior changes follows. A comparison is made between CS and SS in airline companies using the variables of perceived usefulness, trust, perceived ease of use, perceived benefits, and intention to use. This research is considered novel since trust and perceived benefits variables are added (Figure 1 & Figure 2).



**FIGURE 1
THE PROPOSED SERVICE QUALITY**



**FIGURE 2
THE PROPOSED E-SERVICE QUALITY**

Perceived Usefulness, Trust, Perceived Ease of Use, Perceived Benefit and Intention to Use

Berkley & Gupta (1994) and Zhu et al. (2002), in their study, included elements of information technology in improving service quality, resulting in intentions to use technology-based self-service options (Dabholkar, 1996). Rust & Lemon (2001) defined e-service as the role of service in cyberspace. Santos (2003) showed that the success or failure of e-service quality comes from electronic commerce. The dimensions used were ease of use, appearance, linkage, structure and layout, and content.

Venkatesh & Davis (2000) defined perceived usefulness specifically as the extent to which the object of adoption is thought to enhance the individual's performance on the job. Davis (1989) defined perceived ease of use as the degree to which a person believes that using a particular system would be free of physical and mental efforts.

Mokhsin et al. (2011) study resulted in perceived usefulness influencing behavior intention to use, while perceived ease of use does not affect behavior intention to use through attitude. Wu & Wang (2005) showed that perceived usefulness directly affects behavior intention to use, while perceived ease of use does not have an immediate effect on behavior intention to use. Perceived ease of use has an indirect impact on behavior's intention to use through perceived usefulness (Wu & Wang, 2005)

McKnight et al. (1998) definition of trust is "that one believes in, and is willing to depend on, another party". Trust that appears in consumers will cause consumers to trust and use self-service changes. Similarly, Ramos et al. (2018), perceived usefulness and perceived ease of use influence intention to use through trust. Lee (2005) showed the influence of trust as a mediating variable on the intention to use. Wang & Tseng (2011) stated that trust influences intention to use through attitude. Perceived usefulness and perceived ease of use influence intention to purchase through perceived website trust (Agag & El-Masri, 2016).

Kabra et al. (2017) showed that trust does not influence behavior intention to use. Susanto et al. (2016) found that perceived usefulness influences continuance use intention, while trust as mediation does not affect continuity use intention. In addition, Chiu et al. (2017) showed that age does not moderate between trust and behavioral intention to use.

Lee (2005) showed that perceived usefulness and perceived benefits influence intention to use. Still, perceived ease of use impacts intention to use through perceived usefulness and attitude to use. Shanmugam et al. (2014) stated that perceived usefulness has a direct effect on the intention to use; perceived ease of use has no effect on attitude to use, and perceived benefits impact attitude to use, while attitude to use affects intention to use. Based on the theoretical study above, the following research hypotheses are compiled:

- H₁* *There is a difference between CS and SS in perceived usefulness, trust, perceived ease of use, and perceived benefits*
- H_{2a}* *perceived usefulness influences intention to use in CS*
H_{2b} *perceived usefulness influences intention to use in SS*
H_{3a} *trust influences intention to use in CS*
- H_{3b}* *trust influences intention to use in SS*
- H_{4a}* *Perceived ease of use influences intention to use in CS*
- H_{4b}* *Perceived ease of use influences intention to use in SS*
H_{5a} *Perceived benefits influence intention to use in CS*
H_{5b} *Perceived benefits influence intention to use in SS*
- H_{6a}* *age strengthens the influence of perceived usefulness, trust, perceived ease of use, and perceived benefits on the intention to use in CS*
- H_{6b}* *age strengthens the influence of perceived usefulness, trust, perceived ease of use, and perceived benefits on the intention to use in SS*

METHODOLOGY

This research is an experiment. Experimental research refers to investigations by manipulating at least one variable. Manipulation is carried out on the independent variable to influence the dependent variable (Solso et al., 1998). In specific, Solso et al. (1998) stated that experiment emphasizes on manipulating the independent variable, control other variables that

are suspected of polluting the research process, and measuring the effect of the manipulated variable on the dependent. According to these definitions, this research conducts investigations by manipulating some variables to address the research objective, namely: Instrument variables for perceived usefulness (PU), perceived ease of use (PEOU), and intention to use (ITU) refer to Venkatesh & Davis (2000), Mokhsin et al. (2011), and Wang & Tseng (2011). Instrument trust (T) refers to Kabra et al. (2017), Wang & Tseng (2011), and Agag & El-Masri (2016). Perceived benefit (PB) instruments refer to Lee (2009).

In this research, the tools used in the experiment were two animation movies about flight service quality. These movies were used as a manipulation to modify behavior in specific condition. According to Sugiyanto (2009), in an experiment study, the researchers do not need to manipulate physical independent variable, but they can choose participants with certain desired condition. In this research, the participants were manipulated to comprehend two different airlines services. One movie tells about the service quality process in CS, and the other one tells about the SS process. These movies were designed by the researchers as experiment tools describing two processes of aviation service quality. The movie on CS describes the process of ticketing information and luggage handle with officer helps, while in the other movie on SS shows the services done individually. In relation to the aforementioned variables, manipulation was carried out on the variables of perceived usefulness, trust, perceived ease of use, and perceived benefits. The effect of the variable being manipulated is the intention to use.

The research was conducted from June to August 2020 by involving 20-40 years old participants as the millennial generation residing in Bandung and Jakarta. Millennials were born between 1980-2000 (McDonald, 2015). Experiment on millennials was selected considering that they adopt faster to technological changes. There were 244 randomly selected participants, in which each of them watched the two movies and answered closed questionnaire with 6-scale. The 6-scale questionnaire was used to avoid neutral answers (Agung, 2011).

The obtained data were then analyzed using paired-sample t-test, multivariate regression, and Process macro SPSS. The Hayes' Process Macro developed by Hayes (2008) was used as a statistical moderation and mediation analysis in SPSS to estimate the path coefficients using multiple regressions for the continuous outcome (Preacher & Hayes, 2008). In calculating validity and reliability, correlation and Cronbach's alpha (Heale & Twycross, 2015) were used. The results of the validity and reliability tests are presented in the following Table 1.

Indicators	Validity	Reliability
PU1	0.765	-
PU2	0.647	-
PU3	0.855	-
PU4	0.853	-
PU5	0.85	-
PU	-	0.829
T1	0.801	-
T2	0.831	-
T3	0.868	-
T4	0.906	-
T5	0.847	-
T	-	0.908
PEOU1	0.886	-
PEOU2	0.891	-
PEOU3	0.885	-

PEOU4	0.883	-
PEOU5	0.884	-
PEOU	-	0.93
PB1	0.805	-
PB2	0.869	-
PB3	0.918	-
PB4	0.906	-
PB5	0.84	-
PB	-	0.918
ITU1	0.886	-
ITU2	0.878	-
ITU3	0.924	-
ITU4	0.902	-
ITU	-	0.919

Table 1 shows that the indicators used are valid because they have values above 0.06 and Cronbach's alpha value above 0.7. It can be interpreted that the result of correlation from the observed scale with all other possible scales that measure and use the same number of questions (Nunnally & Bernstein, 1994; Nunnally, 1978) are reliable. In this research, there were 51.6% male and 48.4% female participants. Most of them were in the age between 18-30 years (94%) and still students. Therefore, it can be inferred that the participants suiting this research since they are believed to be millennial group accepting changes to services in flights.

RESULTS AND DISCUSSION

In testing H1, seeing the differences between CS and SS, the paired-sample t-test was used. Testing H0: $\mu_{cs} = \mu_{ss}$ and H1: $\mu_{cs} \neq \mu_{ss}$ where μ_{cs} = CS mean and μ_{ss} = SS mean. The variable difference test results are shown in Table 2, with a level of $\alpha = 0.05$.

Variable	t-test	P-value	Result
PU _{cs} - PU _{ss}	1.537	0.126	H0 cannot be rejected
T _{cs} - T _{ss}	0.957	0.339	H0 cannot be rejected
PEOU _{cs} - PEOU _{ss}	-0.193	0.847	H0 cannot be rejected
PB _{cs} - PB _{ss}	0.195	0.846	H0 cannot be rejected
ITU _{cs} - ITU _{ss}	3.773	0.000	H0 rejected

Table 2 presents there is no difference between CS and SS in perceived usefulness, trust, perceived ease of use, and perceived benefits variables for consumers. Meanwhile, the only difference is only in the intention to use CS and SS. Companies need to pay attention to the services provided because they can shape consumer behavior in a flight.

To answer hypotheses 2 to 5, multiple regressions was used and the regression test results are shown in Table 3.

Table 3 shows that H2a and H2b, namely perceived usefulness, influence intention to use on SS compared to CS, meaning that the SS concept accepts perceived usefulness. These results are in line with (Susanto et al., 2016; Shanmugam et al., 2014; Mokhsin et al., 2011; Lee, 2009; Wu et al., 2005).

The H3a and H3b test results show that trust does not influence the intention to use. It indicates that consumers have confidence in CS and SS flight processes in Indonesia so that it does not affect intention to use. The results of the H3 test are in line with Kabra et al. (2017) and Susanto et al. (2016) but do not support (Lee, 2009; Wang et al., 2011; Agag & El-Masri,

2016).

In testing hypotheses H4a and H4b, perceived ease of use does not affect the intention to use. This result supports (Mokhsin et al., 2011; Wu & Wang, 2005; Shanmugam et al., 2014). Their research results indicate that perceived ease of use influences intention to use to mediate variables.

Hypothesis	Path	t-value	Significant	Results
H2a	PUcs→ITUcs	1.126	0.262	Not supported
H2b	PUss→ITUss	2.362	0.019	Supported
H3a	Tcs→Tcs	-1.705	0.9	Not supported
H3b	Tss→Tss	0.429	0.668	Not supported
H4a	PEOUcs→PEOUcs	0.661	0.51	Not supported
H4b	PEOUss→PEOUss	-0.297	0.767	Not supported
H5a	PBcs→PBcs	7.495	0	Supported
H5b	PBss→PBss	4.915	0	Supported

H5a and H5b tests show that perceived benefits influence intention to use, meaning that consumers want to make an intention to use if the benefits received are following their expectations. These results are in line with (Lee, 2009; Shanmugam et al., 2014). Hypotheses H6a and H6b were tested using Hayes' process macro in model 1 with age as the moderating variable. The results of the hypothesis testing are shown in Table 4.

Independent	Moderating	Dependent	t-value	ρ	LLCI	ULCI	Result
PUcs	Age	ITUcs	1.7382	0.0835	-0.0055	0.0888	Not supported
PUss	Age	ITUss	-0.0919	0.9269	-0.0417	0.0380	Not supported
Tcs	Age	ITUcs	1.1839	0.2376	-0.0195	0.0781	Not supported
Tss	Age	ITUss	0.4919	0.6232	-0.0331	0.0551	Not supported
PEOUcs	Age	ITUcs	1.7938	0.0741	-0.0038	0.0804	Not supported
PEOUss	Age	ITUss	-0.0085	0.9932	-0.0421	0.0418	Not supported
PBcs	Age	ITUcs	1.9920	0.0475	0.0004	0.0475	Supported
PBss	Age	ITUss	1.3049	0.1932	-0.0151	0.0743	Not supported

Note: LL = Lower Limit; UL = Upper Limit; CI = Confidence Interval; LLCI & ULCI = 95%

Table 4 presents that age can strengthen or weaken the perceived benefit variable on the intention to use in CS. Meanwhile in SS, age does not strengthen or weaken this influence. Age cannot moderate the perceived usefulness, trust, and perceived ease of use towards intention to use in CS and SS. These results support Chiu et al. (2017) that age cannot moderate trust in the intention to use.

The overall hypothesis test results indicate that both CS and SS can be used by airlines. If the company uses SS, the processes from the information of ticketing, ticketing, check-in, and baggage are expected to be easier for the consumers. Meanwhile, the consumers expect the benefit of using CS and SS services, meaning that the service process of using air transportation is easy and fast. Although the research is aimed at the millennials generation, they do not want the SS flight process alone. Therefore, airlines can combine CS and SS. This combination of service processes is still desired by consumers today. Companies that can fulfill desires and provide the best service are chosen by consumers and it is an advantage for airlines.

CONCLUSION

Overall, the service systems of CS or SS do not make any difference for consumers. The difference occurs in the intention to use in CS and SS. It is supported by the regression test results, which showed that perceived usefulness (SS) affected the intention to use. In meaning that, practicality in the flight process, using technological advancement is carried out independently by consumers is a choice.

Perceived benefits affect the intention to use CS and SS, which means that services prioritize consumers in using flights. Airline companies need to pay attention to benefits for consumers, so that they want to use the same flight. It was also found that age affects the perceived benefits of using CS. The use of technology in the flight process shows that perceived benefits are more important than trust and perceived ease of use. For consumers in adopting technology provided by airline companies, the perceived benefits are the main factors. Therefore, the company's strategy needs to pay attention to the benefits provided to different consumers compared to its competitors by providing a combination of CS and SS services. Considering that fast-paced technological development on aviation services, therefore, future studies are recommended to add attitude as mediating variable.

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