Factors Related To Citizen Satisfaction And Continuous Use Intention Of E-Government Portal In Bengkulu Province, Indonesia

Dr. Achmad Aminudin, MSi
Public Administration Department
Faculty of Social and Political Sciences,
Bengkulu University, Indonesia

Abstract—**The study aims to describe citizen satisfaction and continuous use intention and also measuring relationship between perceived usefulness, service quality, system quality, information quality and trust in e-government portals. This study used an explanatory sequential design. The survey had 189 respondents and in-depth interviews with 15 people were conducted. Citizens in Bengkulu Province are moderately satisfied and have intention to use the e-government portal continuously. Citizens' satisfaction and intention to use portal e-government are significantly related to perceived usefulness, service quality, system quality, information quality. Trust in e-government portals have an insignificant relationship towards citizen satisfaction and continuous use intention. Citizen satisfaction relates significantly toward continuous use intention. A well-organized and user-friendly portals are more important than trust in data security. The availability of fast internet is the key to escalating e-government usage, therefore it needs to build the infrastructure and reduce the e-government loading time in remote areas.**

I. INTRODUCTION

In the current global and digital era, all aspects have changed from conventional systems to digital systems. This technological development also occurs in governance as an effort to make it easier for people to obtain public services. E-government is one of the concepts of government utilizing information technology to improve public services. Bengkulu Province is one of the provinces in Indonesia that is developing e-government. The Bengkulu provincial government has planned to implement e-government since 2016 with the issuance of the Bengkulu governor regulation number 35 of 2016 concerning the implementation of electronic government in the Bengkulu provincial government and has been implemented gradually starting in 2018 which is stated in the Governor's Regulation on the E-Government Master Plan in the Government Environment of 2018. In Bengkulu Province, people have started using the e-government portal to take care of the necessary administrative documents such as registration of investments, making passports, paying taxes for vehicles and income, making identity cards, and others.

The Decree of the Minister of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia Number 1503 of 2021 concerns the evaluation results of the electronic-based government system in ministries, institutions, and local governments stated that Bengkulu Province is ranked 10th with a score of 2.79 above Central Java Province which is classified as a developed province with a score of 2.74.

Factors that contribute to the intention to reuse the e-government portals include perceived usefulness, service quality, information quality, system quality, and trust in the e-Government Portal [1]. The intention to reuse the e-government portal can be an evaluation of the implementation of e-government in the Bengkulu Provincial government to be able to increase the usefulness, quality of service, quality of information, quality and security of data on the e-government portal system so that as a whole it can provide optimal services for the public.

II. LITERATURE REVIEW

Continuous use intention is the intention of user to continue or the intention of long-term use of the technology [2]. Ultimate success depends on continued use, but initial use of e-government is a predictor of successful e-government implementation [3].

When a user uses e-government services or websites, satisfaction is the positive feeling they experience. This emotion is determined by the belief they have about how such services interact with the user [4]. Continual and extended use intentions are influenced by citizen satisfaction [5].

Perceived usefulness, as defined, refers to how much people believe a new technology innovation will enhance task productivity [6]. Perceived usefulness is an analysis of the value about

whether people have benefited from the e-government portal [4]. Citizens' impressions of how adopting e-Government services will improve their capability to accomplish public transactions is what is meant by perceived usefulness. Generally, if a technology is beneficial, it will encourage a citizen's intention to use it [7]. Based on research [8], the perceived value of e-government is used as an indicator for how satisfied citizens are with it and how likely they are to play an active role with it. The perceived usefulness stimulates citizen interaction with e-government services and generates satisfaction.

Information quality, system quality, and service quality are all important components of e-government service quality [9]. Citizens' perceptions of security and privacy can greatly influence their use of e-government portals. Users' perceptions of e-government security risks or privacy invasions can cause them to lose faith in the system. Additionally, if they feel that the websites and services offered by the e-government are safe and won't violate their privacy, they will be more likely to trust it [4]. Citizens who believe in electronic government do so because they believe it is safe and efficient. People 's first trust in e-government portals changes as a result of use, which influences their motivational intention to keep using them in the future. In previous studies, trust has been shown to be an important indicator of people' willingness to use e-government continuously [10].

III. CONCEPTUAL FRAMEWORK AND HYPOTHESES

It has found information quality, system quality dan service quality user satisfaction [11]. According to Bhattarcherjee [7], users' desire to keep using an information system is influenced by how satisfied they are with it and how beneficial they think it will be if they keep using it. Based on Li and Xue [4] trust in e-government affects citizens' intention to continuously use e-government. Our studies propose the following hypotheses.

H1 : Perceived usefulness relates positively to the satisfaction of citizen

H2 : Service quality relates positively to the satisfaction of citizen

H3 : Information quality relates positively to the satisfaction of citizen

H4 : System quality relates positively to the satisfaction of citizen

H5 : Trust in e-government relates positively to the satisfaction of citizen

H6 : Perceived usefulness relates positively to the continuous use intention

H7 : Service quality relates positively to the continuous use intention

H8 : Information quality relates positively to the continuous use intention

H9 : System quality relates positively to the continuous use intention

H10 : Trust in e-government portal relates positively to the continuous use intention

H11 : Citizen satisfaction relates positively to the continuous use intention.

Figure 1. Conceptual Framework
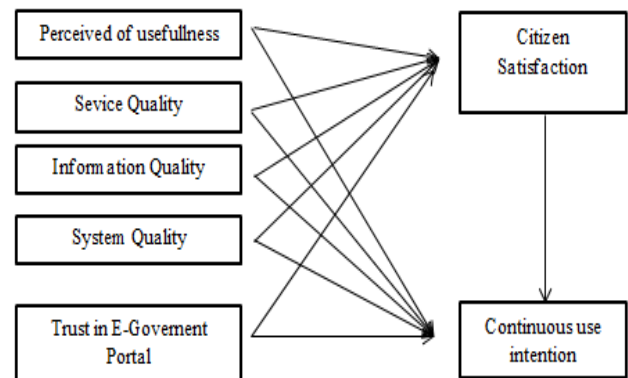
IV. RESEARCH METHOD

This study used an explanatory sequential design, so the result of qualitative data will explain quantitative data. The unit analysis of this study is individual end users of e-government portals. This study starts from January until April 2022. Data from the quantitative study were collected using a questionnaire survey. The instruments were adapted from Teo et al., [12] and Li and Xue [4]. We follow established procedures for translating and retranslating elements originally published from English into Bahasa. The five-point Likert scale was used to ask respondents for their opinions on all of the subjects. The convenience sampling technique was used, so the researcher can reach the participant conveniently. The author approached 250 individuals in Bengkulu Province in the public place who have experience in using e-government portal service and 189 completed responses were obtained, for a response rate of 75%.

Data from the qualitative study were collected using a deep interview with 15 respondents. During the interview process, five qualified interviewers were hired, trained, and supervised. Open-ended questions are used as an instrument in this deep interview. The time of the interview was 5 until 15 minutes.

V. DATA RESULTS

A. *Quantitative Study*

1. Sample Characteristic

Table 1. Sample Characteristic

Variable			Frequency	Precentage
Gender	Male		77	41
	Female		112	59
Age (Years)	≤25		29	15
	26 s.d. 35		59	31
	36 s.d. 45		48	25
	45 s.d. 55		34	18
	>55		19	10
Highest Education Level	Secondary School		24	13
	Diploma		53	28
	Bachelor's Degree		98	52
	Master's Degree		8	4
	Doctoral's Degree		1	1
	Others		5	3
Occupation	Government Employee		95	50
	Private Organization Employee		31	16
	Self Employee		32	17
	Student		21	11
	Others		10	5
Internet use per day (hours)	<5		98	52
	5 – 8		51	27
	9 – 12		16	8
	13-16		7	4
	17-23		10	5
	All day		7	3

A total of 189 respondents participated in this study, the characteristics of the sample are shown in Table 1. Most of the respondents were female (59%). The highest number of respondents (31%) in this study were between the ages of 26 and 35 years, followed by the ages of 36 and 45 years (25%). Most of the respondents were highly educated with more than half (52%) holding a bachelor's degree, followed by a diploma (28%). In terms of occupation, government employees (50%), self-employees (17%), and private organization employees (16%) represented the largest group. Most of the respondents spent less than 5 hours (52%) on the internet.

2. Descriptive and Correlation Analysis

Table 2. Descriptive Analysis

Variable	Mean	SD
Perceived usefulness	3,50	0,58
Service Quality	3,17	0,52
System Quality	3,33	0,50
Information Quality	3,43	0,51
Trust	3,85	0,63
Citizen Satisfaction	3,37	0,65
Continuous use intention	3,31	0,71

3. Bivariate Test

Table 3. Result of Correlation Test between Every Dimension toward Citizen Satisfaction

	Correlation Coefficient	*p-value*
Perceived usefulness	0,18	0,014
Service Quality	0,25	0,001
System Quality	0,31	0,000
Information Quality	0,17	0,017
Trust	0,05	0,515

Table 4. Result of Correlation Test between Every Dimension toward Continuous Use Intention

	Correlation Coefficient	*p value*
Perceived usefulness	0,18	0,013
Service Quality	0,25	0,001
System Quality	0,29	0,000
Information Quality	0,15	0,036
Trust	0,03	0,715
Citizen Satisfaction	0,97	0,000

The mean values for all dimensions slightly exceed 3,42, which reflects the tendency of respondents to agree with measurement items. Most citizens of Bengkulu Province are moderately satisfied with e-government portals (M=3,37) and also have moderate intention to continuously use e-government portals (M=3,31).

We tested all dimensions with a normality test, and the result distribution of all variables wasn't normal. So, we used a non-parametric correlation test. The result of this correlation test is shown in Tables 3 and 4. Perceived usefulness relates significantly and positively with very weak strength to the citizen satisfaction (p-value = <0,05; r=0,18). Perceived usefulness relates significantly and positively with very weak strength towards continuous use intention (p-value = <0,05; r=0,18). Service quality relates significantly and positively with weak strength towards citizen satisfaction (p-value = <0,05; r=0,25). Service quality relates significantly and positively with weak strength towards continuous use intention (p-value = <0,05; r=0,25). System quality relates significantly and positively with moderate strength towards citizen satisfaction (p-value = <0,05; r=0,31). System quality

relates significantly and positively with weak strength towards continuous use intention (p-value = <0,05; r=0,29). Information quality relates significantly and positively with very weak strength towards citizen satisfaction (p-value = <0,05; r=0,17). Information relates significantly and positively with very weak strength towards continuous use intention (p-value = <0,05; r=0,15). Trust in e-government has an insignificant relationship with very weak strength towards citizen satisfaction (p-value = >0,05; r=0,05). Trust in e-government has insignificant relationship with very weak strength towards continuous use intention (p-value = >0,05; r=0,03). Citizen satisfaction relates significantly and positively with very strong strength towards continuous use intention (p-value = <0,05; r=0,97).

B. Qualitative Study

1. Respondent Characteristic

Table 5. Respondent Characteristics of Qualitative Study

Participants	Age (Years)	Occupation	Internet Experience (Years)
1	25	Bank Teller	>5
2	34	Doctor	>10
3	36	Dentist	>10
4	40	Police	>5
5	33	Accountant	>10
6	26	Private Organization Employee	>5
7	50	Lawyer	>5
8	45	Lecture	>10
9	32	Lecture	>10
10	23	University Student	>5
11	48	Nurse	>10
12	60	Retired Government Employee	>5
13	52	Self Employee	>5
14	53	IT Manager	>10
15	30	Teacher	>10

2. Results

a. Perceived Usefulness

Informants feel the benefits of the e-government portal because they do not need to come to the office to complete administrative by offline. Informant 3 stated, "now there is no need to come back and forth to deliver documents, everything is just uploaded". The presence of this e-government portal has not been utilized optimally for elderly informants. This was directly stated by informant 12, "I used to come directly to the office, now I am surprised by this system, I prefer to come to the office". They are used to managing documents by coming directly to the office and face-to-face with officers for years, so the benefits of e-government have not been felt to make their lives easier.

b. Service Quality

As a form of service quality If there are difficulties when using e-government, a contact person service is available to help use the portal. Informant 1 stated, "Actually if we have difficulties we can call the contact person, but sometimes it takes a long time to respond". Informant 15 stated, "if it is really difficult, in the end, we go to the office, the officer who helps to fill in online". The complexity of the e-government portal also affects the community. Informant 2 "When we use an e-government portal, it is difficult and complex. E-government should efficient, effective, less effort, not the other way around". Informant 14 "For me, what I like about the portal e-government is when I can complete the steps fastly". Informant 10 "E-government services can use anywhere and anytime because the Internet reduces time and effort". The design of the display on the e-government portal has also been noticed by the public. Informant 7 expressed "When I find a portal is poorly organized, it took time and effort to find what I wanted to find. A well-organized website helped me find exactly what I needed"

c. System Quality

Informants feel that they often experience portal errors on e-government portals in Bengkulu Province. This happens when the signal in their area is weak. Frequent power outages also disrupt online activities when accessing e-government portals. Informant 4 stated, "I feel obstructed from using e-government when the signal at my house is weak, so the page loading time is very slow. Also, a slow website can cause frustration". Informant 6 expressed his annoyance with terms such as "Internal Server Error", "Bad Request", or "Service Unavailable".

d. Information Quality

The quality of information was also a very concerning aspect that was valued by the public. Informant 8 expressed "the information on e-government portals should be clear and also accurate. Sometimes there is still outdated information, so it not only gives a negative impression but also confusion". Informant 13 said "I remember that there is one government portal that puts a brief description as a guide about how we fill an online form which located under every column that needs to be filled. It helped me so much to fill out the form online".

e. Trust

Public perception of data security in e-government has not become a priority at this time. Informant 9 expressed "Actually, seeing the current news about identity data leaked on the internet, brings a sense of disappointment, but we can't do anything," Informant 11 said, "Currently when we are using an e-government portal, the most important thing is that it is

easy to use, and about data security issues I leave it to the government".

VI. DISCUSSION

Generally, citizens of Bengkulu Province are moderately satisfied with e-government portals (M=3,37) and also have a moderate intention to e-government portals continuous use (M=3,31). Citizen satisfaction leads to continuous and long-term use intentions [13].

Perceived usefulness of e-government portal leads to citizen satisfaction (p-value = 0,014) and continuous use intention (p value=0,013). This is related to the study on Pakistan's students analyzed the perceived usefulness of e-Government as an indicator to increase citizen satisfaction [8]. Perceived usefulness was positively related to the continuous use intention of e-government [14]. If users consider e-government will be useful, then they will be more likely to continue using the service. However, older citizens have not experienced the full benefits of the e-government portal as they are still adapting to this system. Older citizens see the cost, convenience, and accuracy of information in e-government portals [13]. So, the designer must take into account the needs of users in designing the e-government portal.

Service quality relates to citizen satisfaction (p-value = 0,001) and continuous-use intention (p value= 0,001). This is in line with previous study, service quality correlates to citizen satisfaction and continuous use intention [15]; [16]. The contact person on each e-government portal must always be ready to help if there are people who experience difficulties or obstacles so that people in the end do not have to come to the office directly and administrative matters can be resolved more quickly and easily. An e-government portal that provides dependable and prompt services to citizens and is responsive to their requests would enhance citizen satisfaction with e-government portals [15]. The government also should improve the functional aspects of e-government portals, for example, by providing a live chat option as a responsive solution if people face difficulties while using e-government portals. A well organized and user-friendly displays on e-government portals also help people find what they need due the citizen in Bengkulu Province is still in the transition stage.

System quality correlate to citizen satisfaction (p-value = 0,000) and continuous use intention (p value=0,000). System quality is highly related to satisfaction of active users [12]. Thus, e-government portals must avoid technical problems. Fast loading time, every link can work, and there is no freezing even in the peak time tend to make the user more satisfied. However, the weak signal problem in some areas makes people frustrated when using e-government. This result corresponds to study that stated the infrastructure factor is very crucial in e-government implementation since internet availability increase the delivery of e-government service even in remote areas [17]

Information quality leads to citizen satisfaction (p-value = 0,017) and continuous use intention (p value= 0,036). Information Quality in e-government specifically the tax e-filling system has a significant effect on the continuous intention to use [18]. Out-of-date information should not be displayed on the portal page because it makes people not satisfied. Information presented should be more accurate and meet the needs of citizens, it should also provide clear and accurate information. How to use the online service for any transaction should also be included, so it becomes a guide for the community.

Trust in e-government doesn't correlate to citizen satisfaction (p-value = 0,515) and continuous use intention (p value= 0,715). This is contrary to the study that stated, trust in e-government can affect the citizen's satisfaction and intention to continuously use e-government [4]. However, it is in line with the statement from Baharon [15]. The insignificant result may be attributed to different adoption stages of e-government services. When citizens are new to e-government services, trust plays an important role in influencing the initial adoption of the new technology [19]. However, when citizens have adopted the new technology, their trust in the technology does not necessarily exert a significant force on their satisfaction level with using the technology. For citizens of Bengkulu Province citizens' awareness of privacy protection is low and indifferent to the exposure of personal private information.

VII. CONCLUSION

1. Citizens of Bengkulu Province are moderately satisfied with e-government portals and also have moderate continuous use intention of e-government portals.
2. Perceived usefulness, system quality, service quality, and information quality relate significantly and positively to the citizen satisfaction and continuous use intention of portal e-government, with very weak to moderate strength.
3. Trust in e-government portals have an insignificant relationship towards citizen satisfaction and continuous use intention
4. Citizen satisfaction significantly and positively relates with very strong strength toward continuous use intention
5. Citizens in Bengkulu Province are still in the transition stage of using e-government. Functionality aspects of e-government portals should be improved for example by providing a live chat option. A well-organized and user-friendly display on e-government portals is more important than trust in data security. Apart from that, the availability of fast internet access is the key to escalating e-government usage, therefore it needs to build the infrastructure and reduce the e-government loading time even in remote areas.

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