Innovation of Public Service Based on E-Government:

A Study on SMS Gateway Website Application of Pulosari Village, Bareng Sub-District, Jombang District

Aizzatun Nabilah*
Master of Public Policy Program, Faculty of Social and Political Science
Airlangga University
Surabaya, Indonesia
*aizzatun.nabilah@gmail.com

Abstract—**Indonesia's development has now been centered on rural communities. It is proven by the Village Law, which was passed by the government on January 15, 2014. One of the articles in the Village Law, Article 86 No. 6, 2014, discussed that the village information system is managed by the Village Government and can be accessed by the village community and all stakeholders. Therefore, the majority of village governments in the territory of Indonesia implemented a village information system using the village website. Hence, the village website is not only used as a medium of information and public transparency. The Pulosari Village Government creates an innovative public service through a short message service (SMS) gateway menu, where the application as one of the solutions to the complex problem of the issuance of village cover letters. This study analyzes the quality of public services through the SMS gateway application and the extent to which the application already has essential elements in the implementation of e-government in the Pulosari Village Government, Bareng Sub-District, Jombang District. The research method used in this research is descriptive with a qualitative approach. From a number of theories used in analyzing the main problems faced by the Pulosari Village Government, it was found that the compatibility regarding existing service innovations was incompatible with the conditions of village communities who were generally more frequent at home and technologically illiterate. When viewed in terms of the elements of successful e-government development, the three factors that have been mentioned have a significant role. It is indicated by the data findings in the study. The SMS gateway is a form of service innovation, but it is suitable for the conditions of the Pulosari Village community.**

Keywords—public service innovation, SMS gateway application, e-government

I. INTRODUCTION

Indonesia's development is currently centered on rural communities. It is proven by the existence of the Village Law, which was passed by the government on January 15, 2014. The village law implies the delegation of government authority granted by the central government to the village government, which covers all aspects of administration in the village and the development of rural areas. It aims to increase the effectiveness of services and public welfare. In more detail, the Village Law article 78, 2014 stated:

> "The purpose of rural development is to improve the welfare of rural communities and the quality of human life and poverty alleviation through the fulfilment of basic needs, development of rural facilities and infrastructure, development of local economic potential, and sustainable use of natural resources and the environment".

In order for a rural development to run effectively, it requires the participation of the village community as the target of the development as well as the supervisor of the process of implementation of development in the rural areas. The village government is required to optimize communication and services to the communities to realize effective rural development. As a form of optimizing communication and services between the village government and the community, the Pulosari village government created an innovation in communication and services through the village website.

Pulosari Village is located in the administrative area of Jombang District. More precisely, it is located on Jl. Arjuno No. 313 Pulosari, Jombang. The location of Pulosari Village is quite far from the center of Jombang with a distance of ± 35.00 KM and is on the slopes of Mount Arjuna. However, this limitation does not cause technology lags. The existence of the Pulosari Village website shows that there is a spirit of using technology as a means towards good governance in the process of village governance and communication to the village community.

In Pulosari Village, the village website is not only functioned as a means of communication, accountability, and marketing of the village's superior products. It is also functioned as a means of public service through several menus

displayed on the Pulosari Village website. One is the service menu in the process of the issuance of village cover letters. Today, the process of making village cover letters was considered as time-consuming and most are still using the manual process. However, it does not apply to Pulosari Village. On the Pulosari Village website, there is an application menu called "SMS gateway", which functions as a service for making village cover letters through Short Massages or better known as SMS.

The uniqueness of the "SMS Gateway" service menu is that this service does not require the applicants to come and wait for the process of making the letter. Using this service menu, the people who need a cover letter only need to open the Pulosari Village website and access the service menu. The required village cover letter can be directly received when coming to the village office without the process of waiting for the cover letter to proceed.

Based on the uniqueness of the Pulosari Village website that implements the gateway Short Message Service (SMS) service, it is expected to be a pilot for improving village government services, especially in East Java. It is essential to study this innovation so that it can be applied in all villages in Jombang in particular and in all villages in Indonesia in general. Thus, the research title chosen is "Innovation of public service based on e-government: A study on SMS gateway website application of Pulosari Village, Bareng Sub-District, Jombang District". With this explanation, this research aims to explain and analyze innovation services based on e-government; a study on the SMS Gateway Website application in Pulosari Village, Bareng District, Jombang Regency.

II. RELATED WORKS

Studies on improving the quality of services, especially those based on innovation by using technology, have been carried out. These studies show that the use of technology is significant in improving the quality of service. Some research studies relevant to this research are as follows:

A. *The Public Value of E-Government – A Literature Review by Jean Damascene Twizeyimana and Annika Anderson (2019)*

The first research reference is a journal article with the identity of Government Information Quarterly 36 (2019) 167-178This first study analyzes the problem of how the situation and what is produced by e-government resulted from the analysis of several journal articles that discuss the values of e-government. The results of the study show that of the 53 articles that have been analyzed, there are six things that have in common in assessing e-government, including improved public services, improved administrative efficiency, open government capacity (OG), increased ethical behavior and professionalism, increased trust and confidence in government, and increased social value of welfare [1].

B. *Reinventing Local Governments and the E-Government Initiative by Alferd Tat-Kei Ho (2002)*

The second research reference is a journal article with the identity of the Public Administration Review of Jul/Aug 2002; 62, 4; ProQuest pg. 434. The results show that based on city website content analysis and survey of web development officials, many cities have moved towards a new paradigm regarding e-government. These cities have adopted "one-stop shopping" and customer-oriented principles in Web design, and they emphasize external collaboration and networking in the development process rather than technocracy. This article also analyzes socio-economic and organizational factors related to the progress of cities in Web Development and highlights future challenges in reinventing government through Internet technology [2].

C. *Public Service Innovation Based on E-Government: A Case Study of Ogan Lopian Application of the Communication and Information Office in Purwakarta District by Haura Attahara (2018)*

The third research reference is a journal article with the identity of the Indonesian Politics Journal, Vol. 3, No. 1 July, 2018. The research method used is descriptive research with a qualitative approach. The focus of this research is that the quality of services provided by the District Dissemination Board of Purwakarta can be seen from the three dimensions of responsiveness, responsibility, and accountability [3]. In addition, an introduction to the application of Ogan Lopian application with three elements that must be possessed in the implementation of e-government, namely supports, capacity, and value. The results showed the Ogan Lopian application launched by the Communication and Information Office Government of Purwakarta still needs improvement and stabilization in terms of technology, information, and communication infrastructure resources and managers of human resources that can support the success of e-government.

From the three previous studies that have been presented, the researcher used a relevant theory to the researcher's problem in advance to be used as a guideline in the research process. Based on the strengths and weaknesses that have been described in the previous studies, the researcher tries to improve using the problems proposed by the researcher.

III. METHODOLOGY

This research explains about Public Service Innovation Based on E-Government: A Study on the SMS Gateway Website Application in Pulosari Village, Bareng Sub-District, Jombang District by using a qualitative approach research method in which the research is descriptive, which provides an accurate description and explanation of the problem at hand [4]. Thus, this research seeks to describe and explain and then draw conclusions from problems regarding public service innovation based on e-government.

The focus of this research is service innovation in the Pulosari Village website, Bareng Sub-District, Jombang

District. Therefore, two parties who would become informants were obtained, namely: a) Internal: Village Head, Website Operator, Village Secretary, and Village Development Staff. b) External: three people from Pulosari Village who have accessed the Village website and three people who have never accessed.

The research location is a place used as an object of research or a means to obtain sources of information about what is being studied. The location in this study is the Pulosari Village Office located at Jalan Anjasmoro No.313, Pulosari, Bareng Sub-District, Jombang District. This location was chosen because the Pulosari Village office has implemented a village website, and there is a menu to improve services in the form of an SMS gateway. It assists the Pulosari Village community to ask for cover letter. This study hopes that the application of the village website to improve services will become a pilot project for other village governments, especially in the Jombang area, and the village administration in general.

IV. RESULTS AND DISCUSSION

Theoretically, service innovation is related to the development and implementation of something new [5]. According to Tri Widodo W Utomo, Deputy for Administrative Innovation, LAN, Public Service Innovation is a breakthrough type of service, either an original creative idea and/or adaptation or modification that benefits society [6]. Public service innovation does not require a discovery but can be a new contextual approach [7]. In Indonesia, the government has established regulations regarding service innovation stated in the Minister of Administrative Reform and Bureaucratic Reform of the Republic of Indonesia Number 30, 2014 about guidelines for public service innovation. This article explains that it is necessary to develop and establish public service innovations to accelerate the improvement of the quality of public services. As a means of service innovation, most government agencies use the internet or often called e-government [8].

E-Government is related to the use of electronic media as a means of increasing the quality of effective and efficient public services. The implementation of e-government is very diverse, such as the village website. Pulosari Village website has information that is divided into two categories, namely static and dynamic information. The static information contains profiles of the village, village government, community institutions, village data, contacts, and property taxes (PBB) information. Meanwhile, the dynamic information contains the village news, TP PKK, village products, village agenda, village regulations, village reports, village service guidelines, and the latest articles. The type of service innovation provided on the Pulosari Village website is the SMS gateway menu.

SMS Gateway is a menu providing services on creating village cover letters or other complaints. The facility used in the mail request process is a private chat room communication model that can be connected directly with the village website operator. Requests for cover letters or complaints submitted

through the village website operator chat will be replied directly by the website operator if online and is a way of community interaction with the Pulosari Village apparatus. The SMS gateway is used as the application of choice if the community does not want to wait for the cover letter to proceed. If properly utilized, service improvement will be felt significantly by the people of Pulosari Village. The difference between the process of making village cover letters using the SMS gateway application and manual letters is the waiting time in the issuance of the letters. In the manual process, the community must wait for the process of typing the letters. However, with the SMS gateway, the community can come to the Pulosari Village office and directly receive the required cover letters without waiting for typing the cover letters. Even, the Pulosari Village community can print their cover letters from the village, then ask for a signature and stamp from the village office. Following is the appearance of the SMS gateway service menu in figure 1:

Source: Pulosari Village Website, 2019

Fig. 1. SMS gateway website services in Pulosari Village.

Viewed in terms of service innovation at an agency, according to Rogers, there are five attributes as follows [9]:

A. Relative Advantage

The relative advantage is looking back at the extent to which innovation is considered better than the idea it replaces. The measurement of the level of relative advantage is often proven by economic benefits. The nature of innovation influences on determining the specific types of relative benefits such as economic, social, and how many users likes innovation [9].

The relative advantage of having an SMS gateway menu is the ease of making village cover letters. However, these benefits have not yet been felt by the Pulosari village community. Of the several communities that researchers met, the perceived benefits were still limited to social benefits, which with the menu, many people from other villages knew the existence of Pulosari Village in the hilly area. Regarding the economic benefits, the Pulosari Village website, which presents several promotions of village products and village

tourism, made some people interested in visiting Pulosari Village. However, the impact has not been fully felt.

B. Compatibility

Compatibility is measuring the extent to which innovation can be consistent with existing values in society, experience, and the potential needs of adopters of innovation. Innovation can be declared appropriate or not based on the (1) sociocultural values and beliefs, (2) ideas that were introduced earlier, and (3) user needs for innovation [9].

The advantages of this SMS gateway will only be felt if the people who are provided with services also have the spirit of change in terms of technology. From the three opinions of Rogers, who stated that innovation could be compatible or incompatible, it can be seen that one of the SMS gateway menus can be considered incompatible because it is not following the values and sociocultural beliefs of the Pulosari Village community. Many people in the Pulosari Village are technologically illiterate and consider this service to be burdensome if it has to be run. It is because they must have an internet quota to access the SMS gateway application on the Pulosari Village website. Furthermore, most of them consider that they have more time for the process of making letters in the village office because of their work, which most of them are farmers, giving them free time and flexibility.

It is in line with what has been revealed in a research journal by Alferd Tat-Kei Ho, which explained that households with higher incomes were more likely to use computers and the internet, while households in the suburbs, often minorities, tended to not tied to the digital world [2]. People are required to use the internet to access the SMS gateway menu, but some of them do not have internet access and technology illiterate [2]. Based on the educational demographic data of the Pulosari Village, of the total population of 4085 people, most of the population have never pursued education (not going to school) with details of the number of 1371 inhabitants. It is one of the factors causing one of the government's innovations in providing SMS gateway services not accessed by the local villagers due to their lack of knowledge about technological developments.

C. Complexity

Complexity is the level at which an innovation is considered relatively difficult to understand and use. Every new idea can be classified on a complexity-simplicity continuum. Some innovations mean to potential adopters while others do not. Although the research evidence is far from conclusive, we suggest Generalization 6-3: The complexity of innovation, as perceived by members of the social system, is negatively related to the level of adoption [9].

Based on the opinion stated by Rogers above, the people of Pulosari Village felt the same level of complexity, as found by the researcher, which is the process of accessing the village website. The village community considered that the process of making the cover letters manually, which requires coming directly to the district office and waiting for the process of making the required letters at this time, was quite good. Therefore, the existing of the SMS gateway application is only accessed by the villagers who live outside Jombang and need the cover letters immediately. This innovation is beneficial for those who tend not to have much waiting time.

D. Triability

Trialability is the level at which an innovation can be tested on a limited basis. An innovation that can be tried is less particular for adopters. Some innovations are more difficult to share for trials than others [9]. Alferd Tat-Kei Ho divided the process of adopting e-government into two general design approaches, which are referred to as "Portal Design". The first is the "Information Oriented" approach applying the concept of "one-stop service" by offering large amounts of content on web pages. The second of the portal design is "User-Oriented" [2]. This portal design categorizes information and services on the website according to the needs of different user groups into three pages, namely pages for residents, business people, and visitors.

Viewed from the types of pages, the Pulosari Village website is categorized into the adopters of e-government in the information approach. It can be seen from the menus that the Pulosari Village Government does not share several pages on the village website. The information displayed is also limited to information about village development and village services in the form of an SMS gateway menu. In the initial stages of the introduction of the village website, the community was very enthusiastic, and most supported the village website. Even at the beginning of the village website, the community tended to be communicative with the Pulosari Village apparatus to deliver some decent news to be displayed on the Pulosari Village website. Whereas, in the SMS gateway menu, the community very rarely accesses it because, according to them, the process of making letters with the manual process is quite good.

E. Observability

Observability is the extent to which others see the results of an innovation. The results of some ideas are observed easily and communicated to others, while some innovations are difficult to explain to others [9].

The SMS gateway service menu is straightforward to communicate to the public. However, it is constrained by the condition of the surrounding community or socio-cultural, which most of the population is not familiar with education. It becomes one of the factors that cause the community tends not to be technologically literate. It is proven by the limited access to Pulosari Village website in terms of the innovation of the service menu.

V. CONCLUSION AND FUTURE SCOPE

A. Conclusion

The use of the SMS gateway application in public services is a service innovation effort offered by the Pulosari Village apparatus in order to support the effectiveness of public services. Furthermore, the community has the choice to continue using the new service process or prefer the manual service process. Seen from several indicators offered in service innovation, one of which is suitability in service, the application of the SMS gateway website in Desa Pulosari is not following the conditions of the people who are mostly technologically illiterate and have more free time. Therefore, in the future, it is expected that the SMS gateway menu can be an alternative service innovation for city residents who have been known to be short of time and need fast and responsive services.

B. Future Scope

Of the various problems that have been described, the researcher provides the following recommendations:

1) For the Government, especially the Pulosari Village Government

- To socialize to the public about the operation of the Pulosari Village website and some of the service functions contained therein.

- Adding public insight into the importance of using information technology in today's life.

2) For further researchers: Future studies are expected to have a broadness of information regarding aspects of research into government services in the village scope.

REFERENCES

[1] J.D. Twizeyimana and A. Andersson, "The public value of E-Government – A literature review," Government Information Quarterly. 2019.

[2] A.T.K. Ho, "Reinventing local governments and the E-government initiative," Public Adm. Rev., 2002.

[3] H. Atthahara, "Inovasi Pelayanan Publik Berbasis E-Government : Studi Kasus Aplikasi Ogan Lopian Dinas Komunikasi dan Informatika di Kabupaten Purwakarta," J. Polit. Indones., 2018.

[4] B. Bungin, Penelitian Kualitatif: Komunikasi, Ekonomi, Kebijakan Publik, Dan Ilmu Sosial Lainnya. 2011.

[5] M.A. Islam, N.K. Agarwal, and M. Ikeda, "Conceptualizing value co-creation for service innovation in academic libraries," Bus. Inf. Rev., 2015.

[6] "Prolog : Fenomena Fragmentasi."

[7] L.P. Sinambela, Reformasi Pelayanan Publik : Teori, Kebijakan dan Implementasi. 2011.

[8] H. Choi, M.J. Park, J.J. Rho, and H. Zo, "Rethinking the assessment of e-government implementation in developing countries from the perspective of the design–reality gap: Applications in the Indonesian e-procurement system," Telecomm. Policy, 2016.

[9] E.M. Rogers, A. Singhal, and M.M. Quinlan, "Diffusion of innovations," in An Integrated Approach to Communication Theory and Research, Third Edition, 2019.