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# Communicating The Smart City Concept to The SME Community

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***ABSTRACT:*** *The smart city concept has been used by many cities in Indonesia as means to ease people lives. Yogyakarta, as the province with the highest ratio of area and number of tourism visits in Indonesia (Dhini, 2022; BPS, 2015), is a province that has been quite hit by the COVID-19 pandemic. One of the affected parties are Small and Medium Enterprises (SMEs). To anticipate this, the Yogyakarta City Government launched the Jogja Smart Service (JSS) application. JSS was launched with the aim of facilitating public services, and one of its features namely Gandeng Gendong to bring together the SMEs community with potential buyers. This paper will describe the communication process of JSS application by Yogyakarta City Government and SMEs actors. This research departs from the impact of the Covid-19 pandemic felt by the SMEs of Yogyakarta City on the economy in their lives. After the pandemic, the Yogyakarta City Government tried to foster smart economy as one of the smart city branch concepts. Nonetheless, there are still many challenges. In anticipation of a repeat of the economic impact of the COVID-19 pandemic, the SMEs actors must be able to quickly adopt the Jogja Smart Service application. The results of the research obtained are the process of communication by Yogyakarta City Government and SMEs actors in the early majority stage. The SMEs actors are at the confirmation stage. The confirmation determines that SMEs actors continue to use the Jogja Smart Service application but need more socialization and training.*
***Keywords: communication process, smart city, innovation adoption, SME community***

## INTRODUCTION

Smart city has at least become a world trend since 2011 (Bakici, Almirall & Wareham, 2012). The application of the smart city concept is the answer to the development of cities that are increasingly complex along with the increasing number of people in a city. Nam and Pardo (2012) reminded that the growth of urban population can put pressure on various risks, issues, and problems. This further emphasizes the importance of smart city implementation in urban cities. Smart cities have become an unwritten obligation during urban society's dependence on the internet of things to support fast-paced urban life with high demands.

Caragliu, Del Bo, and Nijkamp (2011) emphasized that the success of smart city implementation depends on three factors, namely technological factors, institutional factors, and human factors. Meanwhile, Winkowska, Szpilko, and Pejic (2019) suggest that there are at least six elements of a smart city, namely smart economy, smart governance, smart living, smart people, smart environment, and smart mobility. Several cities in Indonesia have declared as smart cities, including Bandung, Jakarta, Bogor, Makassar, Aceh, Balikpapan, and Yogyakarta City (Yuliarti, Hastjarjo and Anggreni, 2017).

The implementation of smart city in Yogyakarta City is interesting to see. This is because Yogyakarta Special Region (DIY) is a province known as a city of culture and tourism. The Yogyakarta City Government has carried the motto "Jogja Cultural Experience" to respond to the fact that Yogyakarta is the second tourism destination after Bali (jogjakota.go.id, 2022). It is not surprising that tourism

has become the foundation of the community's economic sector, especially Micro, Small, and Medium Enterprises (MSMEs). It is well known that the Covid-19 pandemic has had an impact on all economic sectors in Indonesia, also in the city of Yogyakarta. This is also felt by Micro, Small and Medium Enterprises (MSMEs). All economic sectors in Yogyakarta City have been affected, including MSMEs which are the driving force of the economy (Kuntadi, 2021). From the data obtained through a survey of MSME community in the Special Region of Yogyakarta affected by Covid-19, it shows that from mid-March 2020 to June 2020 MSME revenues fell from IDR 19.3 billion to IDR 3 billion with a range of 80% decline (Evani, 2020).

Following up on the data mentioned, there are extra efforts with all stakeholders to accelerate the economic recovery of Yogyakarta City (Humas Pemda DIY, 2022). The development of this increasingly advanced technology, the Communication, Information and Standardization Office of Yogyakarta City has the Jogja Smart Service application owned by the Yogyakarta City Government which is used to form the commitment of Yogyakarta City towards Smart City (Kominfo Jogjakarta, 2018). Smart city is a concept used to solve a problem using innovation, technology, and sustainability (Novriando, 2020).

The JSS application has several features to be able to access information for the people of Yogyakarta City which brings together various e-government application public services (Assidiq, 2018). The presence of the Jogja Smart Service (JSS) application in the perspective of MSMEs seeks to pursue the digitalization program for Small and Medium Enterprises (MSMEs) (Ramadhan, 2021). The JSS application has so far provided facilities for MSME community in Yogyakarta City. The JSS application has several menus that can be used by people who download the application. One of the menus is the trade category. This trade category is used for MSME community in Yogyakarta. In the JSS application feature, there is a '*Nglarisi*' menu which can be maximized for MSMEs in the culinary sector to join to participate in digitalization (Ramadhan, 2021). The *"nglarisi"* menu is a place for Yogyakarta City MSME community who are included in the *Gandeng Gendong* group. The *Gandeng Gendong* group is a group of MSME community with a minimum of five members, one of whom is an underprivileged member. The existence of underprivileged members is intended to be coupled with people who are more able to work together.

With the JSS application used to encourage MSMEs in Yogyakarta to go digital, this digitalization effort is used to support and help MSME community recover after the Covid-19 pandemic (warta.jogjakota.go.id, 2021). The existence of the application is something new for several MSMEs of a certain age. Jogja Smart Service, which supports Yogyakarta City to become a smart city, directs Yogyakarta City MSMEs to go digital in this technological era. The existence of a novelty through this JSS application, the community needs to adopt technology using the diffusion of innovation. Diffusion of innovation is the process of spreading a new idea to bring about change in a group that is carried out continuously from time to time (Rogers 1995 in Sciffman and Kanuk 2010). Something that is considered new by society is an innovation. An innovation can be conveyed to the intended audience with communication. In the diffusion of innovation, communication is an important aspect so that a novelty can be adopted by the community (Rogers, 2003).

An innovation will be implemented by the community after clearly capturing the novelty. In this case, the presence of the Jogja Smart Service application is a novelty for the people of Yogyakarta City, especially for MSME community who will follow the digitization of Yogyakarta City in achieving smart cities. This is in line with the statement from Roche et al. (2013) which emphasizes that the keyword of smart city implementation is communication. So, this research tries to see the communication process carried out by stakeholders in realizing the smart city concept in Yogyakarta City, especially in the use of the Jogja Smart Service application by MSME community.

## LITERATURE REVIEW

### Communicating Smart City

The increase in urban populations around the world has pushed city governments to innovate new ways of managing increasingly complex cities. The smart city concept assumes that cities must be creative, become areas that sustainably improve the quality of life, form a friendly environment, and have stronger economic development prospects (Lee et al., 2008). In the context of Yogyakarta City, the word "smart" in smart city can be associated with tourism cities and destinations that include all initiatives from local decision makers, including innovative technology in the management process, which leads to increased effectiveness and better quality of life for stakeholders, as well as improving tourism experiences and services to tourists (Gretzel, Werthner, Koo, & Lamsfus, 2016).

Yigitcanlar et al. (2018) formulated that there are three driving factors of smart cities, namely community, technology and policy which are expected to produce productivity, sustainability, accessibility, wellbeing, livability, and governance. The technology and policy aspects tend to be easier to realize because of the project-based system used by the government. The factor that requires special attention from smart city implementation is the community factor. This factor is a challenge due to the diversity of literacy and experience levels, which makes the adoption of new technologies and innovations not easy.

The focus on the community sector was highlighted by Roche et al (2013) who emphasized that the main keyword of smart cities is communication. Zubizarreta, Seravalli, and Arrizabalaga (2015) add that smart cities are constantly evolving and therefore require communication and information dissemination. The communication model that is close to the purpose of smart city information dissemination is Harold Lasswell's communication model. Lasswell's model explains the communication process and its function in society. Communication according to Lasswell in (Perdana, 2021) is the process of delivering messages through the media to audiences that cause certain effects. This communication model describes the communication process scientifically in various derivatives of each communication element along with the answers to the questions that have been raised. This model is used to analyze interpersonal communication or group communication that is the target of the message.

**Innovation Adoption by Community**

Rogers' diffusion of innovations theory is an appropriate theory to explore technology adoption (Medlin, 2001; Parisot, 1995 as cited by Sahin, 2006). This theory was developed to explain how, why, and how quickly a new idea and technology spreads across cultures by incorporating individuals, groups, systems, which explain change and reduce uncertainty (Berger et al., 2014). A technology is a design to reduce uncertainty in cause-and-effect relationships to achieve desired outcomes (Rogers, 2003). Adoption is a decision to maximize the use of innovation as the best course of action. Meanwhile, rejection is a decision not to adopt an innovation (Rogers, 2003). Diffusion is a process of communicating an innovation or novelty through certain communication channels over time in the social system of society (Rogers, 2003).

Rogers (2003) asserts that there is a decision process to adopt an innovation needs to go through five stages: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. The knowledge stage emphasizes the cognitive aspect when individuals know there is an innovation. The persuasion stage emphasizes more on affective aspects when individuals respond to information about the innovation with certain behaviors, both positive and negative. The decision stage is when individuals decide whether to adopt or reject the innovation. The implementation stage is when individuals begin to practice adoption. Finally, the confirmation stage is when individuals try to find support for the decisions they have made. Rogers (2003) asserts that there are five categories that distinguish subgroups within a community in adopting new innovations. These classifications are innovators, early adopters, early majority, late majority, and laggards. (1) Innovators who are a group of people who are willing to try new ideas for the first time on an innovation. In this category, adopters are ready to face unfavorable or unsuccessful innovations. In this category, adopters are the entrance of an innovation into a community. (2) Early Adopters, people in this category are usually leaders of the community. Community members

will seek advice/consideration from early adopters regarding the innovation. (3) Early Majority, this group tends to have good social networks and interpersonal networks. They usually take a little longer than the previous two categories. (4) Late Majority, this group tends to wait until more than half of the community members have adopted. (5) Laggards, this group tends to be skeptical of the presence of innovation. they tend to look at other community members, whether successful or not in adopting the innovation

## METHODOLOGY

This research is a type of qualitative research. According to Strauss and Corbin (2007) qualitative research is a type of research whose findings do not use statistical procedures or other calculations. Qualitative research refers to non-mathematical data analysis. The methods used for data collection are in-depth interviews and document studies. In-depth interviews were conducted with the head of the UKM Office of Yogyakarta City, the programmer of the Communication and Informatics Office of Yogyakarta City, and MSME actors in the Gandeng Gendong Group. The answers to each source were analyzed in three stages, namely data reduction, data presentation, conclusion drawing and verification. The analysis is given in the form of a narrative.

## RESULT AND DISCUSSION

Diffusion is a process of communicating an innovation or novelty through certain communication channels over time in the social system of society (Rogers, 2003). Thus, a novelty from the Jogja Smart Service (JSS) application diffuses by providing information from communication to a wide audience. The broad audience aimed at this research is MSME community who are members of the gandeng gendong group in Yogyakarta City. The information is provided through certain communication channels, namely interpersonal channels, and group channels. Thus, there are four main elements in the diffusion of innovation according to Rogers (2003):

**a. Innovation**

An innovation is an idea, practice, project that is considered a novelty by individuals or groups (Rogers, 2003). Researchers see an innovation in this study arising from the Jogja Smart Service application which is mobile based using a smartphone with full digital access. Public services for the community are felt by MSME community in Yogyakarta City. The informants felt a change because before the JSS application, buying and selling activities were carried out conventionally, namely direct transactions. With the JSS application, it provides a novelty for the resource persons of the gandeng gendong group in accessing digitalization. One of the interviewees of the gandeng gendong group felt that they were accustomed to using technology such as the intense use of smartphones as a means of offering their food, therefore the presence of the JSS application was not something foreign, but it was indeed a new thing because the application belonged to the Yogyakarta City government.

**b. Communication Channel**

Interpersonal channels take place face-to-face and can provide direct reciprocity. That way, the interpersonal channels provided through the Communication and Informatics of Yogyakarta City and the Yogyakarta City Small and Medium Enterprises (UKM) Office to MSME community are in the form of workshop on these innovations. The first workshop that was held at City Hall was attended by MSME community in the gandeng gendong group. The workshop was carried out by the Communication and Informatics Office of Yogyakarta City together with the Yogyakarta City Small and Medium Enterprises Office in 2018. The workshop targeted MSME community to provide information about online sales using the JSS application. We see that the purpose of the workshop is that the Yogyakarta City Government is trying to provide information about the presence of novelty in the lives of the people of Yogyakarta City, namely the Jogja Smart Service application

and encourage MSME community to join using the JSS application.

**c. Time Frame**

Interpersonal channels take place face-to-face and can provide direct reciprocity. That way, the interpersonal channels provided through the Communication and Informatics of Yogyakarta City and the Yogyakarta City Small and Medium Enterprises (UKM) Office to MSME community are in the form of workshop on these innovations. The first workshop that was held at City Hall was attended by MSME community in the gandeng gendong group. The workshop was carried out by the Communication and Informatics Office of Yogyakarta City together with the Yogyakarta City Small and Medium Enterprises Office in 2018. The workshop targeted MSME community to provide information about online sales using the JSS application. We see that the purpose of the workshop is that the Yogyakarta City Government is trying to provide information about the presence of novelty in the lives of the people of Yogyakarta City, namely the Jogja Smart Service application and encourage MSME community to join using the JSS application.

**d. Social System**

The diffusion of innovations occurs in a social system, so the social system influences individual and group innovations as the main criterion for the emergence of adopter categorization (Rogers, 2003). There are five categorizations of members of the social system of an innovation (Rogers, 2003), namely first, innovators as a category for those who first adopt an innovation, second there are early adopters as a category of opinion givers, early majority as early followers of an innovation, late majority as late followers where after many people can accept innovations, and finally laggards as a category for those who do not easily accept innovations, and tend to wait for the benefits of innovations for communities that have adopted.

Based on the research results, the three gandeng gendong groups of MSME community are included in the early majority category, because these MSME community were early followers when the Jogja Smart Service application was launched in 2018 and already had the JSS application. At that time, not many people joined the *"nglarisi"* menu as now there are almost 300 gandeng gendong groups that have joined using the *"nglarisi"* menu. The interviewee also said that when Jogja Smart Service was first launched, the *"nglarisi"* menu was not as optimized as it is today. At that year, only a few *Gandeng Gendong* groups were registered, and orders had not yet begun to come from the OPD, whereas now it is active, and many orders come through the *"nglarisi"* menu.

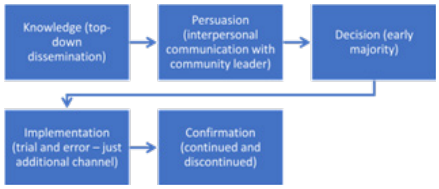


**Figure 1. Adoption Process of *Gandeng Gendong* Application**
**Source: Obtained by Researchers, 2023**

The researcher saw that the informants used the JSS application for *"nglarisi"* purposes only. Other uses of public services are used when there is the latest information that will appear through notifications on each user's cellphone. In addition, resource persons also use the JSS application as an application that helps get Covid-19 vaccinations. Knowledge of the existence of innovations that lead a person or group to generate a desire to know and learn about the existence of innovations. Second, knowledge of how to use innovations through clear information about the use of innovations in their lives. Third, knowledge of the fundamental principles of how innovations can work in the environment.

At the decision stage is the understanding that individuals must determine the decision to accept or reject the innovation. According to Rogers (1995), adopting means using the innovation. A person or group has known the concept of innovation and considered the advantages and disadvantages that will be obtained in applying the innovation. After that, a person or group will decide to adopt or reject the innovation. We see that the heads of MSME actors in the *Gandeng Gendong*

group have fully understood the Jogja Smart Service application regarding what is in the application and the place given to MSME actors. The head of MSME community who realize that there are benefits provided by the Jogja Smart Service application, namely by providing opportunities to develop into a better MSME group. Therefore, the head of the gandeng gendong group can decide to become an adopter, namely adopting the Jogja Smart Service application innovation.

The MSME community of the *Gandeng Gendong* group have carried out the implementation stage. The implementation stage is that MSME community apply the use of the Jogja Smart Service application in their lives as MSMEs. There are several obstacles in using the JSS application in their lives. These obstacles are technical, sometimes the Jogja Smart Service application cannot be accessed because there is maintenance or application development. But these obstacles do not have a big influence on MSME actors because they can be resolved soon.

The Yogyakarta City MSME community is at the confirmation stage which determines whether the adoption process will continue or not. Some of the obstacles felt by MSME actors make a benchmark in taking further action. The MSME community in the *Gandeng Gendong* group carried out the decision-making process for an innovation in 2018 with the final stage, namely confirmation. This confirmation stage is due to experiencing several obstacles in using the Jogja Smart Service application as described in the implementation section.

With the obstacles discussed earlier, the gandeng gendong group finally decided not to stop adopting the Jogja Smart Service application in their lives. MSME community, especially in the gandeng gendong group, have full awareness of the obstacles experienced, there have been actions from the Yogyakarta City government to help minimize the problems experienced. This has been felt slowly over time by MSME actors, so that at this time the application of using the Jogja Smart Service application in life can improve from before and can be evenly distributed to all gandeng gendong groups. The informants still use the JSS application in their lives, but it is not the main choice of MSMEs to get their income. JSS is only used as a complementary marketing channel.

## CONCLUSION

Based on the data findings and analysis conducted using the diffusion of innovation theory, we conclude that the Yogyakarta City Government has made new innovations to support the MSME sector to enter the smart city atmosphere. The Yogyakarta City Government has only conducted initial socialization of the "Nglarisi" feature in JSS to the MSME community. The MSME community of Yogyakarta City is included in the early majority category where they were early followers when the Jogja Smart Service application was launched. The entry of the MSME community into this early majority is in 2022 even though the JSS application was present in 2018. This is supported by the "trade" feature on the 'nglarisi' menu which was not active enough before the pandemic.

With the Covid-19 pandemic, it has become a full encouragement for the Yogyakarta City Government Office to encourage MSME community to use the 'nglarisi' menu again. The JSS application has the potential to develop more into an innovation that brings something valuable to MSME community that has never been felt before. That way, innovation has a greater chance of being adopted and applied in daily activities. This research is useful for government institutions that have projects with a group of people or communities related to the introduction of new technologies. The government should involve the community more in the process of adopting new technology. Communication cannot use a top-down paradigm. Future research can further explore communication barriers in the process of adopting new technology initiated by government institutions.

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