Improvement of Surabaya Bus Public Transportation Services

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Improvement of Suroboyo Bus Public Transportation Services Based on the Bus Golek Application Innovation in the City of Surabaya Indonesia

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ABSTRACT

One of the government's duties to fulfill the need for safe, comfortable and affordable public transportation services so as to facilitate the mobilization of the community in carrying out its activities is the Golek Bus Application Service as an innovation in improving public transportation services for users of the Suroboyo Bus service. The purpose of this research is to find out and describe the application innovation Gobis in improving public transportation services Suroboyo Bus in the city of Surabaya by using qualitative research methods with data collection techniques observation, interviews, and documentation. Data analysis techniques are data collection, data condensation, data presentation, and drawing conclusions. The results show that the five attributes of innovation are as follows: 1) Relative advantage in innovation has been carried out optimally because it has advantages over previous innovations, 2) Conformity in the innovation of gobis applications in suroboyo bus services is optimal, but there are still some that need improvement due to the lack of additional routes for lines that match the corridors in the gobis application, 3) The complexity of this new innovation is also good but there are still shortcomings related to the arrival and departure schedules of Suroboyo Bus.

Keyword: Innovation, GolekBis application, Public Transportation Service

INTRODUCTION

Efforts to create a good type of public transportation by making efforts to improve service standards based on the Regulation of the Minister of Transportation PM. 98 of 2013

concerning Minimum Service Standards for People with Public Motorized Vehicles on Routes [1], which has 6 variables, among others, security, safety, comfort, affordability, equality and regularity. Public transportation services are currently still classified as low level, people as service users often complain about a sense of security that is not guaranteed so that people tend to prefer to use private vehicles as their primary need for their daily activities. This results in the volume of vehicles not proportional to road developments, resulting in congestion.

Surabaya is one of the second largest metropolitan cities in Indonesia. Based on the Central Bureau of Statistics, 2019 has an area of 350.54 km and a high population density of up to 3,158,943 people [2]. Several actions that have been taken by the Surabaya City Transportation Agency continue to be carried out in regulating traffic flow, as stated by Plt. The Head of the Surabaya City Transportation Agency, Irvan Wahyu Drajat, stated that the five strategies have been running for the last few years. It's just that, the process takes a long time:

> *"The arrangement and construction of mass transportation (MRT), traffic restrictions (restriction of motorbikes, paid roads, parking management), road network capacity (road widening, new road network development), traffic discipline (socialization, educational curriculum), and law enforcement. (ticket, vehicle crane, embezzlement) " [3].*

Meanwhile, each year the number of private two-wheeled and four-wheeled vehicles in East Java, especially in the city of Surabaya, is always increasing. In 2017-2019 for R2 vehicles on average increased by 7.03% per year from 1,944,802 to 2,159,069. Meanwhile, the R4 vehicle itself has increased from 517,959 to 570,571. This density is due to the very rapid growth in the number of motorized vehicles, especially four-wheeled vehicles, in the last 3 years. Dense traffic can reduce the level of driving comfort, increase the risk of traffic accidents and contribute to worsening environmental conditions due to air pollution in the city of Surabaya.

With technological advances, the higher the demands for community mobility towards public transportation modes. The government must make improvements in traffic engineering, public transportation, legislation, road pricing and the operation of the existing transportation system [4]. This is in line with Guido Di Pasquale et al's research on Innovative public transport in Europe, Asia and Latin America: a survey of recent implementations. The results of the analysis clearly show that the need for innovative public transport solutions is a priority in all cities; integrated networks and supporting infrastructure are relevant for most of them, while there are still few solutions that address clean vehicle focus areas [5].

The Surabaya City Transportation Agency has a Suroboyo Bus program as a form of innovation in public transportation which officially started operating on April 7, 2018. Suroboyo Bus is a Bus Rapid Transit based transportation. BRT (Bus Rapid Transit) a transportation system that has high quality in terms of safety, timeliness, comfort, infrastructure and a transportation system that is on schedule. In addition to reducing congestion in public transportation, it supports environmentally-friendly efforts. The

Suroboyo Bus payment system by contributing plastic bottle waste, this is as explained in the Regulation of the Mayor of Surabaya Number 67 of 2018 concerning Contribution of Waste in Using Suroboyo Bus Surabaya Services, is an effort to reduce plastic waste in the regions.

The Suroboyo Bus Public Service Agency as the manager of Suroboyo Bus in the City of Surabaya has been trying to get better by presenting service innovations in order to improve public transportation services, namely the Gobis Application program is a form of modification and replication of existing innovations that have been implemented in the system. Gobis service application. In addition, the Gobis application in the Playstore has been downloaded more than 100,000 times with a rating of 4.5 / 5, which means that the Gobis application always has an increase in help and is needed by Suroboyo Bus passengers to access more details. The bus operating hours start from 06.00 to 22.00 WIB for all routes / corridors. For passengers who wish to change from one route to another, passengers can get off and board the bus at connecting stops. The existence of connecting stops can be seen on buses and maps at several stops or on the GOBIS application.

The Gobis application has been supported by elements of digital technology, namely using a red QR code that has the words Scan Me To Pick You Up which can be scanned in the Gobis application and shows the location of the bus that is being awaited safer, this QR Code system also aims to make it easier for bus crews to connected with users so as to improve efficiency and effectiveness in the service process. However, with the implementation of the Gobis system, service users will be given advantages in the transaction process such as being safe, comfortable. With the Suroboyo Bus, you can use this application for tracking the position of the bus. The waiting feature for this stop is a QR Code scan. Based on the background and phenomena that have been stated above, the purpose of this study is to identify and describe the Gobi Application Innovation in Improving Suroboyo Bus Public Transportation Services in the City of Surabaya.

REVIEW OF THE RELATED LITERATURE

Conceptual Framework

Public Services

Service is a process of meeting needs through the direct activities of others [6]. Meanwhile, Pasolong [7] states that service is an activity of individuals, groups and organizations either directly or indirectly to meet needs. It is different from Hiplunudin[8] that improving the quality of public services implies a change in quality, conditions, from the current state to a better quality.

Public Service Standards

The service standard components as stipulated in the Regulation of the Minister of State Apparatus Empowerment Number 15 of 2014 are as follows:

i. Requirements, namely requirements (documents or goods / other things) that must be fulfilled in managing a type of service, both technical and administrative requirements. Service requirements are a demand that must be met in the process of providing services in accordance with statutory provisions.

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ii. Systems, mechanisms and procedures, namely standardized service procedures for service recipients. Service procedure is a process that a customer must go through to get the necessary service.
iii. Service period, which is the time required to complete the entire service process of each type of service.
iv. Fees / tariffs, namely fees charged to service recipients in managing and / or obtaining services from the operator, the amount of which is determined based on an agreement between the organizer and the community.
v. Service products, namely the results of services provided and received in accordance with predetermined conditions.
vi. Complaint handlers, suggestions and input, namely the service provider organization are obliged to establish a complaint management mechanism. The forms of complaint management that are widely used include: provision of suggestion boxes / complaint boxes, SMS, complaint portals on the website, and the provision of complaint receiving officers [9].

Public Service Innovations

Regulation of the Minister of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia Number 30 of 2014 concerning Guidelines for Public Service Innovation, explains that innovation is a creative process of creating knowledge in making new discoveries that are different and / or modifications from existing ones [10]. In particular, innovation in public institutions can be defined as the application (the effort to bring) new ideas in implementation, characterized by a significant change in steps towards changes in the organization and organizational relationships. Innovation in public services has a unique characteristic, namely its intangible nature because service and organizational innovation is not only based on products that cannot be seen but on changes in the relationship of the perpetrator, namely between service providers and service receivers (users), or the relationship between various parts within. organization. The process of the birth of innovation can be driven by various situations. In general, innovation in public services can be born in the form of initiatives such as:

i. Partnerships in public service delivery, both between government and private sector government and government, CBO-NGOs and government.
ii. Use of information technology for communication in public services.
iii. Procurement or establishment of service institutions that clearly increase the effectiveness of services (health, education, law, or public safety).
iv. Increasing the enrichment of roles for the internal government system that previously existed in society.

Innovation

Damanpour in Syarifuddin [11], explains that innovation can be in the form of new products or services, new production process technology, new structural and administrative systems or new plans for organizational members. In line with this, Rogers in Tanye[12] explains that innovation is an idea, practice, or object that is considered new by individuals from one other adoption unit. The meaning of Damanpor and Rogers shows that innovation is something tangible or something intangible.

Other thinkers who try to provide limitations in understanding innovation are Windrum and Koch[13] who limit the notion of innovation, namely "restricted themselves to novel products and processes finding a commercial application in the private sector". In this limitation, Windrum and Koch emphasize 2 (two) important things of innovation, namely: 1) The novelty of a product. In other words, innovation is only related to products that are new in nature and 2) Innovation is related to the search process for commercial applications in the business sector.

Typology of Innovation

Innovation studies so far have shown that the process of innovation is not as simple as translating it by bringing novelty only, but is more complex than that because it involves many aspects, especially in the public sector. Mulgan & Albury in Muluk[14], show that "Successful innovations is the creation and implementation of new processes, products, services, and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality." Successful innovation is the creation and implementation of new processes, products, services and service methods that are the result of real development in terms of efficiency, effectiveness or quality of results. What is shown by Mulgan & Albury proves that innovation has developed far from the initial understanding that only includes innovation in terms of products (products & service) and processes.

Product or service innovation comes from changing the shape and design of a product or service while process innovation comes from the continuous quality update movement and refers to the combination of organizational changes, procedures, and policies needed to innovate. According to Baker in Muluk [14], he explains that new developments that include innovation in service methods are still developing into strategic or policy innovations. Innovations in service methods are new changes in terms of interacting with customers or new ways of providing services. Innovation in strategy or policy refers to the new vision, mission, goals, and strategies and their reasons for departing from existing realities. Another type that is now also developing is innovation in system interaction which includes new or updated ways of interacting with other actors or in other words, changes in governance (change in governance).

Innovation Category

Meanwhile, according to Halvorsen in Lewrick *et al.*[15], said that innovation itself can be categorized as follows:

1. **Incremental Innovations - Radical Innovations**
   This innovation is related to the level of authenticity (novelty) of the innovation itself. In the industrial sector, most innovations are incremental improvements.
2. **Top-down Innovations - Bottom-up Innovations**
   This is to explain who is leading the behavior change process. Top means higher management or organization or hierarchy, while bottom refers to workers or government employees and decision-makers at the unit level (mid-level policy makers).

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3. **Needs-led Innovations and Efficiency-led Innovations**
   The innovation process that was initiated has solved the problem in order to increase the efficiency of services, products and procedures [15].

Another important aspect in the study of innovation relates to the level of innovation, which reflects the variation in the magnitude of the impact caused by ongoing innovation. Mulgan&Albury described this categorization of innovation levels in Muluk[14] ranging from incremental, radical, to transformative. Incremental innovation means that the innovation that occurs brings small changes to an existing process or service. Generally most of the innovations are at this level and rarely bring changes to organizational structures and organizational relationships. However, incremental innovation plays an important role in public sector reform because it can make small changes that can be applied on an ongoing basis, and supports service knitting that is responsive to local and individual needs, and supports value for money.

Radical innovation is a fundamental change in public services or the introduction of completely new ways of the organizational or service process. This type of innovation is rarely carried out because it requires enormous political support because it generally carries a greater risk. Radical innovation is needed to bring about real improvements in public service performance in meeting the long-neglected expectations of service users.Transformative or systemic innovation brings about changes in the structure of the workforce and organization by transforming all sectors and dramatically changing organizational relationships. This type of innovation takes longer to produce the desired results and requires fundamental changes in social, cultural and organizational structures. This type of innovation is certainly more profound, because it includes an organizational systemic structure.

Meanwhile, when viewed in terms of the process, according to Muluk [14](47) innovation is divided into 2 (two) categories, namely:

i. Sustaining innovation: Is an innovation process that brings new changes but is still based on service conditions and systems that are currently running or existing products.
ii. Discontinues innovation: It is an innovation process that brings completely new changes and is no longer based on pre-existing conditions. This innovation brings different services or products, different service users, and even requires different resources.

Innovation Attributes

Innovation will not be able to develop in a status quo condition. Innovation has 1 (one) fundamental characteristic, namely the nature of newness. The nature of this novelty is a basic characteristic of innovation in replacing old knowledge, methods, objects, technology or inventions, which are no longer effective in solving a problem or answering a particular need. Although there is no one agreed definition of innovation, in general it can be concluded that innovation has attributes [16]. The following are the attributes stated by M. Roger in Tanye [12].

i. **Relative Advantage**
Innovation must have advantages and values compared to previous innovations. There is always a newness inherent in innovation, which differentiates it from others.

ii. **Compatibility**
Innovation also has the nature of compatibility or compatibility with the innovation it replaces. This is intended so that old innovation are not automatically wasted, apart from the large cost factor, but old innovations are also part of the transition process to the latest innovations. In addition, it can also facilitate the adaptation process and the learning process for innovation more quickly.

iii. **Complexity**
With its new nature, innovation has a level of complexity that may be higher than previous innovations. However, because an innovation offers a newer and better way, this level of complexity is generally not an important issue.

iv. **Triability**
Innovation can only be accepted if it has been tested and proven to have an advantage or value compared to the old innovation. So that an innovation product must pass the "public test" phase, where each person or party has the opportunity to test the quality of innovation.

v. **Observability**
Innovation must also be observable, in terms of how it works and produces something better.

Concept of E - Government

In Indonesia, the connotation of e-gov refers to the use of computers in service procedures administered by government organizations. But in the international context, e-gov refers more to technology that is widely available in developed countries, namely Internet technology [17]. E-gov refers to users of information technology in government agencies or public institutions. The goal is that governance relations involving the government, private sector and society can be created in such a way as to be more efficient, effective, productive and responsive [18].

Benefits of E-Government

There are several benefits from the application of the concept of electronic government (e-gov) for a country, among others, namely [19]:

1. Improve the quality of government services to its stakeholders (society, business, and industry), especially in terms of performance effectiveness and efficiency in various fields of state life.
2. Increasing transparency, control and accountability of governance in the context of implementing the concept of Good Corporate Governance.
3. Significantly reduce the total cost of administration, relations and interactions incurred by the government and its stakeholders for daily activities.
4. Providing opportunities for the government to obtain new sources of income through its interactions with interested parties.

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5. Creating a new community environment that can quickly and accurately answer the various problems faced in line with various global changes and trends.
6. Empowering the community and other parties as partners of the government in the process of making public policies in an equitable and democratic manner.

Types of E-Government Services

The types of electronic government can be divided into 3 (three) main classes, namely [20]:

1. Publish, which is a one-way communication, where the government publishes various data and information that it has so that it can be immediately, directly and freely accessed by the public and other interested parties via the internet.
2. Interact, namely two-way communication between the government and those concerned.
3. Transact, which is a two-way interaction such as a class of interaction, except that there is a transaction related to the movement of money from one party to another.

Conceptual Framework

Gobis innovation in improving public transportation services in the city of Surabaya can be seen its application by using the innovation attributes put forward by Rogers in Tanye [12], namely:

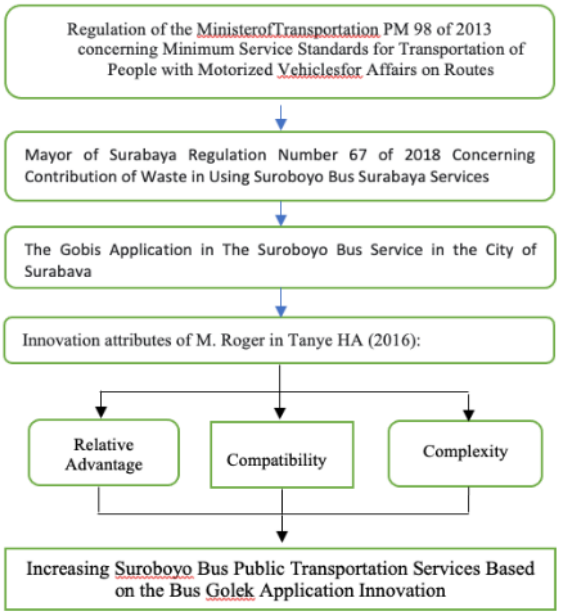

Figure 1: The conceptual framework of Gobis innovation In improving public transportation services
Source: Several theories processed by the author, 2020

RESEARCH METHODS

Types of Research

This type of research used in this research is descriptive research using a qualitative approach. This study aims to see and describe public service innovations based on the GOBIS Suroboyo Bus application in the city of Surabaya.

Research Location

The research location is the location of the application of the GOBIS application services in the Suroboyo Bus service and through the QR code at each bus stop in the city of Surabaya, with the following considerations: 3 (three) routes at each bus stop passed by Suroboyo Bus in the Surabaya City Department of Transportation, the Surabaya City Government is one of the agencies as administering the Gobis application service on Suroboyo Bus transportation via QR code in the City of Surabaya.

Research Focus

The focus of this research is based on the theory of innovation attributes according to Rogers' opinion in Tanye [12] of the 5 attributes, the researcher only examines 3, namely as follows:

i. Relative Advantage: with indicators: a) ease of downloading the GOBIS application, b) increasing the number of bus customers or passengers, c) adequacy of the Suroboyo Bus route and d) accuracy of the departure and arrival of the Suroboyo Bus.
ii. Compatibility: The suitability of the transportation innovation that is formulated has the nature of being compatible or conformity with the transportation policy innovation it replaces. In addition, innovation must also be in accordance with the needs of the community as users of Suroboyo Bus transportation services, with indicators, namely: a) suitability of routes and fleets, b) suitability of bus application facilities and c) suitability of schedules.
iii. Complexity: With its new nature, innovation has a level of complexity that may be higher than previous innovations, including: a) service constraints, b) passenger complaints, c) use of digital technology.

Data Analysis Techniques

Data analysis used in this study is a method developed by Miles and Huberman [21] which is carried out in several stages, namely: data collection, data condensation, data presentation and drawing conclusions and verification.

RESULTS AND DISCUSSION

Overview of the Surabaya City Transportation Service

Based on Law Number 22 Year 1999 and Government Regulation Number 25 Year 2000, the Surabaya City Transportation Service was formed which is a combination of the three services above (LLAJ Service, Terminal Service, Parking Service). Location of the Surabaya City Transportation Service on JalanDukuhKupangMenanggal No.1, Gayungan, Surabaya City, East Java 60234.

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Research Results

Public transportation services developed by the Surabaya City Transportation Agency are one of the Bus Rapid Transit (BRT) transportation based on the GOBIS application that has been supported by elements of digital technology, namely using a red QR code that can be scanned in the GOBIS application and shows the bus that is being awaited more. safe which can be downloaded on the playstore. The QR code system aims to make it easier for bus crews to connect by users so as to improve service excellence.

Suroboyo Bus has 4 main routes, namely: a) Purabaya-Rajawali Route, b) Rajawali-Purabaya Route and c) Surabaya State University (UNESA) Route - Ten November Institute of Technology (ITS), Sepuluh November Institute of Technology (ITS) - State University Surabaya Tongue and d) Merr-GunungAnyar, Mount Anyar-Merr. The bus operating hours start at 06.00 to 22.00 WIB, valid for all routes / corridors, while Sundays at 10.00-22.00. Suroboyo Bus has been operating for 11 months. During this period the number of users of this transportation continued to increase due to the GOBIS application.

The focus of the research is GOBIS Application Innovation in improving Suroboyo Bus transportation services by adopting Rogers' theory of 3 (three) innovation attributes, namely as follows:

Relative Advantage

There are several advantages, advantages and value added (value added) from the innovation of the GOBIS application in the Suroboyo Bus service in Surabaya City, as follows:

Ease of Downloading the Gobis Application

The ease of downloading the GOBIS application for Suroboyo Bus services, as in the results of an interview with Mr. Franki Yuanus as the Head of the Surabaya Bus Unit that:

> *"Using the Suroboyo Bus service, passengers can do it themselves by downloading the GOBIS application. This application the public can find out the position of the bus that will come at the stop ". (Result of interview, 15 July 2020).*

Likewise, the opinion of Mr. Tama Pratama as IT GOBIS is as follows:

> *"Currently 100 applications have been downloaded, proven to help find out where the passengers are at which stop, passengers can connect directly after using this scan Qr code" (Result of interview, 16 June 2020).*

Then Mrs. Wahyuni as the user of the Suroboyo bus at the Bungurasih terminal said that:

> *"Easy and hassle-free, comfortable, and free service. I've downloaded the gobis application to find out where the bus is. To use the Suroboyo bus, just bring a ticket, now for the exchange of plastic bottles the trash can be exchanged inside the suroboyo bus and the crew is stamped. " (Result of interview, 18 July 2020).*

Figure 1. The gobis application that is downloaded on the play store

Figure 2. How to use the Gobis

Figure 3. Halte application on the scan feature

Source: Author's Documentation, 2020

Increase in the number of Suroboyo Bus passengers

The findings in the research location related to the increase in the number of bus passengers, Mr. Mustar as the Suroboyo Bus Unit staff said that:

> *"The number of passengers based on the graph on Instagram Suroboyo bus. In 2018 there was an increase with a yellow chart, while in 2019 there was an additional 10% in the red graph. With this pandemic, there is a limit of 50% for passengers ". (Result of interview, 15 July 2019).*

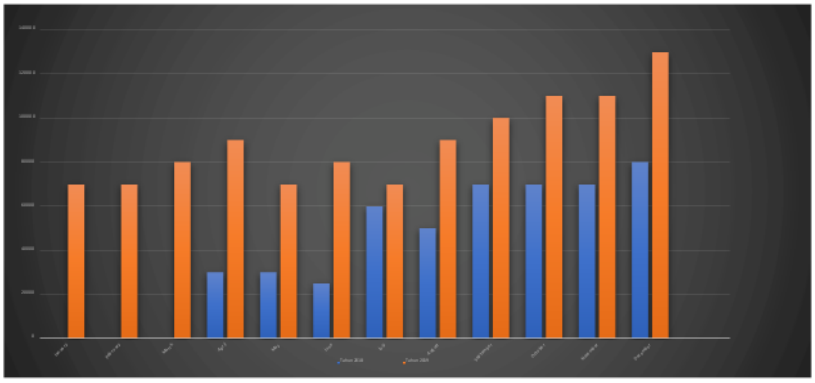

Figure 4.Graphics of Suroboyo Bus Passengers in 2018 and 2019
Source: Author's Documentation, 2020

Adequacy of Routes and Fleets

Passengers can move from one route to another at connecting stops that can be accessed on buses and maps at several stops or on the GoBis application as said by Mr. FrankiYuanus as the Head of the Suroboyo Bus Unit that:

> *"The route's adequacy is sufficient, for additional routes in the future it is still being audited and must be adjusted to the number of passengers and which stops have no fleets. the route of adding the existing route on Merr-GunungAnyar to KenjeranBaru. The addition of the Suroboyo bus fleet is currently 28 in accordance with the 3 main routes that the Suroboyo bus*

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takes every day, we cannot serve other than the 3 designated routes "(Interview result, 15 July 2020)

Then the informant Mrs. Dwi, as the suroboyo bus passenger said that:

"The route needs to be added, maybe added to the middle route such as Ngagel, Pajang so it can be evenly distributed, I think with the addition of routes so the Suroboyo bus fleet can be added. For the route, there is now a new addition in Merr-GunungAnyar because on average there are many office buildings and school buildings "(Result of interview, 19 July 2020).

Accurate Departure and Arrival of Suroboyo Bus

The accuracy of Suroboyo Bus Departures and Arrivals to see the bus arrival schedule on time on the way at each origin and destination stop until the bus's last position can be seen in the Gobis application (playstore). The use of a QR code scan to indicate the location of the Suroboyo Bus fleet at each bus stop at the Suroboyo Bus stop, as stated by Mr. FrankiYuanis as the Head of the Suroboyo Bus Unit that:

"Passenger candidates have to wait at the bus stop and be patient not to let the Suroboyo bus miss, because the Suroboyo bus service with gobis is an application feature". (Result of interview, 15 July 2020).

This is in line with what Mr. Aris, the person in charge of the gobis application at the Surabaya City Transportation Office, said that:

"The accuracy of the departure and arrival of Suroboyo buses is estimated to take 10 minutes and that is also not certain, because there is no route to each other, unlike Trans Jakarta which has its own route". (Result of interview, 17 July 2020).

Furthermore, another informant, namely Ani, as the passenger of the Surabaya bus, said that:

"Usually I wait for about 2 minutes because the Suroboyo bus does not have its own line and transits at the time of changing shifts / breaks and cleaning the bus." (Result of interview, 18 July 2020).

Based on the research findings regarding relative advantages, the innovation of the GOBIS application service is easy, cheap and convenient. The advantages of Suroboyo Bus, one of which is waiting at the bus stop so that passengers can find out where the passengers are after using the qr code scan at each bus stop / bus stop and can find out the routes / corridors that the Suroboyo bus fleets pass. With this advantage, the added value and novelty of the innovation of the GOBIS application in improving Suroboyo Bus services in the City of Surabaya is an online-based system that can be done anywhere and anytime and downloaded on the playstore using a cellphone. This can provide benefits for the community and officers in providing services. Rogers in (Tanye HA, 2016) said that an innovation must have more advantages or value compared to previous innovations. Likewise the opinion [14] which states that innovation can also be divided into 2 (two) categories, namely: Sustaining innovation, is an innovation process that brings new changes but still bases itself on service conditions and systems that are running or

products that are existing and Discontinues innovation, is an innovation process that brings completely new changes and is no longer based on pre-existing conditions. This innovation brings different services or products, different service users, and even requires different resources.

Compatibility

To find out how the appropriateness of the Gobis application innovation in the Suroboyo Bus service, the researcher conducted interviews with several informants related to the predetermined research focus, namely:

Application of Routes and Fleets

The application of the Gobis application service has been supported by elements of digital technology, namely using a red QR code that has the words Scan Me To Pick You Up which can be scanned on the Gobis application in the Suroboyo Bus service. This is in accordance with the statement of Mr. Aries as the person in charge of the gobis application at the Surabaya City Transportation Agency that:

> *"Currently, many of the Gobis application innovations have accessed it. We have provided directions for how to use it according to the route directions in the Suroboyo bus feature and fleet. Especially on the scan at the bus stop / stop, we have provided a lot of scan QR codes. " (Result of interview, 20 July 2020)*

Likewise, the opinion of Mr. Faizal as the supervisor of the Suroboyo Bus said that:

> *"People have no difficulty in downloading the Gobis application and it is clear that the routes in its features are in accordance with their respective corridors, such as Purabaya-Rajawali, Unesa-Its, Merr-GunungAnyar. For a scan at the stop, passengers can find out the position of the bus in the existing GPS. " (Result of interview, 20 July 2020)*

Furthermore, the informant Mr. Radimen, one of the Suroboyo bus passengers, said that:

> *"With the Gobis application, as users of Suroboyo Bus transportation, services are not complicated and easy to access. If a prospective passenger does not know the bus route, you can ask the bus crew ". (Result of interview, 21 July 2020).*

The Innovation of the Gobis Application with the Needs of the Community

Researchers conducted interviews with several informants to determine the suitability of the innovation of the Gobis application with the needs of the community as users of public transportation services including interviews with Mr. FrankiYuanus as the Head of UPTD PTU Suroboyo Bus as follows:

> *"The application features are in accordance with the needs of today's society, such as the place where bottles can be exchanged on the bus or at the Joyoboyo terminal, passengers are waiting at the bus stop / scan this stop is a new feature, so every stop or bus stop that Suroboyo passes has a QR barcode. ". (Result of interview, 23 July 2020)*

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A statement was also said by Mr. Aris, the person in charge of the GOBIS application that:

> *"The GOBIS application feature facility already existed last year, the addition of which is the waiting at the stop / scan at the bus stop. Make it easier for the public to access it and to be able to use the Suroboyo bus in the GOBIS application so that it can improve transportation services, one of which is the Suroboyo Bus ". (Result of interview, 24 July 2020)*

Furthermore, Mrs. Santi, one of the informants from Suroboyo Bus said that:

> *"For the facilities, the features of the GOBIS application are sufficient. If they cannot be exchanged at the bottle exchange, they can be exchanged directly on the bus. The features of the GOBIS application have been explained in each menu ". (Result of interview, 24 July 2020)*

Suitability of the Suroboyo Bus Schedule

The operational suitability of the arrival schedule and the provisions of Suroboyo Bus has been determined every day, this is in accordance with the statement of Mr. FrankiYuanus as UPT Head of Suroboyo Bus that:

> *"The route already exists, the route has arrived and we are currently reviewing the departure schedule. The Suroboyo Bus schedule starts operating at the same time as usual, starting at 06.00-22.00, while Sundays at 10.00-22.00 before the pandemic. Now there is a pandemic, the operational schedule is adjusted every day, such as on the Purabaya - Rajawali route from 06.00 - 21.00, the Unesa-ITS route at 06.00 - 20.00, and the GunungAnyar - RSIA route from 06.00-20.00 ". (Results of 23 interviews, July 2020).*

This statement was supported by Mr. Faizal Akbar as Major General Sungkono's supervisor who said that:

> *"Suroboyo Bus operating hours are Monday-Saturday, for the entire corridor from 06.00-22.00, while Sundays are the same as usual. Before Covid was operational on Sundays at 10.00-22.00 but now operating hours are differentiated, the Unesa - ITS route is 06.00 - 20.00, the GunungAnyar - RSIA route is 06.00 - 20.00, and for the Purabaya - Rajawali route 06.00 - 21.00 ". , 23 July 2020)*

Furthermore, Mrs. Mira as the suroboyo bus passenger said that:

> *"For 2 weeks I used the Suroboyo Bus from Bungurasih Terminal, the operating hours were on time because before I arrived the bus was already there. During the current pandemic, the passenger is limited to only 50% of passengers "(Result of interview, 25 July 2020).*

Fig 4.5.Adjustment of Suroboyo Bus Operating Hours during a pandemic
Source: Author's documentation, 2020

Based on the results of research regarding the compatibility of the Gobis application innovation that its existence is a form of service innovation in the field of public transportation and in accordance with the needs of the community. The public can detect the position of the Suroboyo Bus fleet at the stop according to the corridor in the application feature and according to the predetermined schedule. This is in accordance with Rogers' opinion in (Tanye, 2016), that innovation also has a compatible nature. with the innovations it replaces. This is intended so that old innovations are not simply thrown away, apart from reasons of high cost factors, but also old innovations that become part of the transition process to the latest innovations. In addition, it can also facilitate the adaptation process and the learning process for the innovation more quickly. Likewise, the opinion of Windrum and Koch (2008) which limits the notion of innovation, namely "restricted themselves to novel products and processes finding a commercial application in the private sector". In this limitation, Windrum and Koch emphasize 2 (two) important things of innovation, namely: 1) The novelty of a product. In other words, innovation is only related to products that are new in nature and 2) Innovation is related to the search process for commercial applications in the business sector.

Complexity

Gobis application innovations in improving public transportation services have a level of complexity that may be higher than previous innovations. However, because an innovation offers a newer and better way, this level of complexity is generally not an important issue. The complexity of the Gobis application services is as follows:

Service Complexity

The innovation of the Gobis application is something new that is being applied in the city of Surabaya. The operational services for the Gobissuroboyo bus application program still require competent human resources. This is as stated by Mr. Franki as the Head of UPTD PTU as follows:

> *"Human Resources must be selected and trained beforehand in order to gain knowledge on how to operationalize the Gobis application program. This is important in order to provide good service to the community. " (Result of interview, 23 July 2020)*

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Different things were conveyed by Mr. Faizal as the supervisor of the bus suroboyo at MayjenSungkono, as follows:

> *"At MayjenSungkono11 people were divided into 2 shifts, morning and afternoon. Because in the area of MayjenSungkono there are many office buildings and school buildings. (Result of interview, 24 July 2020)*

Passenger Complaints

In the application of the GOBIS application innovation, there are still passengers who criticize the Suroboyo bus, both from payments using plastic bottle waste that are less effective, the GOBIS application system is error, the facilities on the bus are uncomfortable and the bus arrival time is not on time at the stop. This is as stated by Mr. FrankiYuanus as the Head of the Suroboyo Bus Unit that:

> *"A complaint page has been provided for passengers, to submit complaints or suggestions related to the Suroboyo bus service and its gobis application / scan the qr code through contacts and social media such as the InstagramSuroboyo bus and the email to Surabaya in the form of the name of the reporter, date, time, bus number, name of helper, stop / get off as well as complaints and suggestions from passengers which will be followed up and made improvements ". (Result of interview, 23 July 2020)*

This is also supported by Mr. Mustar's statement as the Suroboyo Bus Unit Staff that:

> *"Most passenger complaints are via Instagram, these reports are processed immediately" (Interview result, 23 July 2020).*

Furthermore, one of the Surabaya bus passenger informants, Mr. Alex, said that:

> *"The Gobis application feature in the bottle exchange is appropriate for the place, the fleet needs to be added and there is also an additional route so that passengers don't wait too long". (Result of interview, 25 July 2020)*

System Constraints

The development of Gobis is a form of modification of existing innovations that are supported by elements of digital technology, namely using a red QR code scan that has Scan Me to Pick You Up which can be scanned in the gobis application and shows the position of the bus that is waiting at the stop. This is as stated by Mr. FrankiYuanus as the Head of the UPTD PTU Suroboyo Bus as follows:

> *"If the central server experiences problems, for example the system has trouble at certain hours, the GOBIS application on the GPS and scanning at each stop cannot be done". (Result of interview 23 July 2020).*

This is supported by the statement of Mr. Pratama as IT Gobis application that:

> *"For the gobis application, unlike Gojek, you have to load to create an account. This gobis application service must be downloaded first gobis and there is a feature menu that can scan the qr code at the bus stop ". (Result of interview, 24 July 2020)*

Furthermore, Ani as a student who uses the Gobis application in the Suroboyo bus service said that:

> *"Once in the past, because the system was again in error, maybe there could be trouble again and the signal is unstable so that it becomes an obstacle to know where the bus is, according to what is in the gobis application". (Result of interview, 19 July 2020)*

The same statement expressed by Mrs. Winayah as a user of the Gobis application in the Suroboyo bus service that:

> *"I have experienced the system without trouble but the signal is not stable because many people access it". (Result of interview, 24 July 2020).*

Based on the results of interviews and observations related to the complexity of using the GOBIS application, there are still people who do not understand how to use this application, so an explanation is needed from the Suroboyo bus crew who are competent in their fields. In addition, there are still passenger complaints regarding the arrival of buses that are not on time at the stop and cannot be predicted and problems with the qr code scanning system at bus stops / bus stops and there are still many people who do not understand how to use the GOBIS application. This is in accordance with Rogers' opinion in (Suwarno, 2008: 17), that with its new nature, innovation has a level of complexity that may be higher than previous innovations. However, because an innovation offers a newer and better way, then this level of complexity is generally not an important problem, so the innovation of the gobis application in the Surabaya bus service in Surabaya still has passenger complaints, which from the Transportation Agency needs to be improved for facilitate the community as a service user of public services.

CONCLUSIONS AND RECOMMENDATION

Conclusion

1. Provision of public transportation through the GobisSuroboyo Bus application provides a relative advantage for the people of Surabaya City, because there is an increase in Gobisapplication downloaders and the number of passengers.
2. The application of the Gobis application innovation is supported by elements of digital technology so that the suitability of route and fleet compliance can be seen from the application and the Gobis application facilities according to community needs and the Suroboyo Bus schedule can be accessed easily.
3. The application of the GobisSuroboyo Bus application innovation contains several complexities related to service constraints carried out by human resources, passenger complaints regarding plastic waste exchange counters and system constraints due to weak internet networks.

Recommendation

1. The government and management should increase socialization to the public so that the GobisSuroboyo Bus application can be known to the public so that information about the comfort and safety when using this service, and information about schedules, service flows, and routes that are traversed can be known by the public.

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2. The Surabaya City Transportation Office fulfills the adequacy of routes and fleets and further improves service performance in terms of departures and arrivals of the Suroboyo Bus fleet.
3. Improve the competence of operational human resources of the Gobis system, increase the number of counters for exchanging plastic waste into tickets and continue to improve the existing system.

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