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ATTRIBUTES OF INNOVATION IN PUBLIC TRANSPORTATION SERVICES AS A FEEDER TRANSPORT MODE IN THE CITY OF SURABAYA (CASE STUDY: FEEDER WIRA WIRI SUROBOYO)

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Abstract. The amount of transportation in the city of Surabaya has increased from year to year. The high volume of transportation causes increased congestion. For this reason, the Surabaya City Government and the Surabaya City Transportation Service have carried out an innovation through public transportation in the form of the Wira Wiri Suroboyo Feeder so that people can switch to public transportation. This research aims to determine and analyze the attributes/characteristics of innovation in the Wira Wiri Suroboyo Feeder public transportation service in the city of Surabaya. The research method used in this research is qualitative with a case study approach. This research uses data collection techniques through observation, interviews, and documentation. The focus of this research uses the theory of innovation attributes according to Rogers in Suwarno (2008) which includes aspects of Relative Advantage, Compatibility, Complexity, Triatibility, and Observability. The results of this research indicate that the innovation attributes of the Wira Wiri Suroboyo feeder public transportation service have been fulfilled but are not optimal, because there is still a mismatch between the service and user needs and supporting facilities such as inadequate bus stops.

Keywords: innovation; service; public transportation

I. INTRODUCTION

The capital city of East Java Province is Surabaya City. The city of Surabaya is the most populous city, so it is not surprising that there are many modes of transportation as a means of mobilizing the people of Surabaya. As the years and eras increase, the volume of transportation also increases. The high volume of transportation has an impact on residents' activities in daily life. According to Miro (2005) in (Rembaens et al., 2018) transportation is defined as an effort to move, move, transport, or divert an object from one place to another where in this other place the object is useful or for certain purposes. One of the positive impacts of increasing transportation volume is the variety of types of transportation which will become an alternative for traveling. However, the increasing volume of transportation is also accompanied by negative impacts that we often encounter and are becoming a serious problem for the government, namely causing congestion.

To overcome the increasing congestion in the city of Surabaya, the city government through the Surabaya City Transportation Department is trying to reduce the use of private motorized vehicles and revitalize (improve) public transportation services. By providing good public transportation services, it will become an alternative transportation and encourage private transportation users to switch to public transportation (Nafi'ah, 2020). Improvements to services and more appropriate transportation facilities are carried out by the Transportation Department so that people feel comfortable and safe on public transportation. Quality public transportation services should be the responsibility of central and regional governments. This aims to get quality, fast, affordable, easy and measurable service. The implementation of public services needs to pay attention to and apply principles, standards, implementation patterns, service bureaus, special service costs, implementation supervision, level of community satisfaction, resolution of complaints and disputes, as well as evaluation of the performance of public service delivery (Purba, 2022).

To improve a good public transportation service for the citizens of Surabaya City, it must also be in accordance with Law Number 22 of 2009 concerning Road Transport Traffic articles 138 and 139 that local governments are obliged to provide public transportation services for people and/or goods and are responsible for the implementation. public transportation that meets safe transportation needs. The Surabaya City Transportation Department continues to strive to improve its transportation facilities to make them more roadworthy and provide comfort for the community.

The Surabaya City Transportation Department continues to innovate public transportation in the City of Surabaya. Innovation is a creation in the process of creating new ways, and new ideas (Larasati, 2015). In 2007, the Surabaya City Transportation Department made an innovation by releasing a School Bus that aims to transport school children which operates during school leaving and returning hours. It doesn't stop there, the Surabaya City Transportation Department continues to increase its innovation, namely in 2018, the Surabaya City Transportation Department innovated again by launching the Suroboyo bus which is intended for the general public with safer and more comfortable facilities with payment using plastic bottles (Febriana, 2021).

However, in this case, the Suroboyo Bus, which is managed by the government through the Public Transport Management Service Technical Implementation Unit (UPTD) of the Surabaya City Transportation Service, totaling 28 units that only operate in three corridors has not been able to reach the wider community (Prabawati et al, 2020). Apart from that, there are several public transportations in the city of Surabaya that are still operating but their numbers continue to decline, such as public transportation/bemos due to problems that arise with public transportation such as lack of facilities, lack of comfort, and inflexibility compared to private vehicles (Praciwi et al, 2020).

Therefore, on March 2, 2023, the Surabaya City Transportation Service and the Surabaya City Government issued an innovation related to public transportation, namely by launching the Wira Wiri Suroboyo Feeder. The Wira Wiri Suroboyo Feeder was launched by the Mayor of Surabaya, Eri Cahyadi, to invite the people of Surabaya to use Wira Wiri Suroboyo to reduce congestion and reduce the number of traffic accidents, as well as being able to reach narrow road points throughout the city of Surabaya. (Surabaya.co.id, 2023).

Wira Wiri Suroboyo is a public transportation service with modern facilities intended for the general public. The Wira Wiri Suroboyo feeder has 56 units with a headway time at the bus stop of around 15-20 minutes. On each trip, Wira Wiri Suroboyo will be guided by a helper who acts as a ticket conductor. Wira Wiri Suroboyo is equipped with adequate facilities such as passenger seats equipped with safety belts. There are priority seats for disabled passengers, the elderly, or pregnant women. Wira Wiri Suroboyo is equipped with air conditioning and sophisticated monitor screens. Apart from that, there is CCTV which is used for passenger security, and a glass-breaking hammer which is used by passengers if they experience an emergency (Hamida, 2023). The following is the Wira Wiri Suroboyo route as quoted from the official Instagram post @wirawirisuroboyo as of March 19, 2024:

TABLE I. WIRA WIRI SUROBOYO FEEDER ROUTE AS OF MARCH 19, 2024

No.	Code	Route
1.	Code FD01	Terminal Benowo - Tunjungan
2.	Code FD02	PNR Mayjend Sungkono – Balai Kota
3.	Code FD03	Terminal Intermoda Joyoboyo – Gunung Anyar
4.	Code FD05	Mayjend Sungkono – Puspa Raya
5.	Code FD06	Terminal Intermoda Joyoboyo - Lakarsantri
6.	Code FD07	Terminal Bratang – Stasiun Pasar Turi

Source: Wira Wiwi Suroboyo's Instagram, 2024

However, there are still several problems related to service innovation from the Wira Wiri Suroboyo Feeder public transportation, including complaints regarding routes that do not reach several places, drivers/helpers who drive poorly, lack of fleet on several routes, use of the Gobis application which cannot be downloaded by the user. Ios, as well as lacking facilities such as several bus stops that don't have roofs or seating, and even the AC isn't cold. This can be proven based on researcher observation data via the following Instagram account @wirawirisuroboyo:

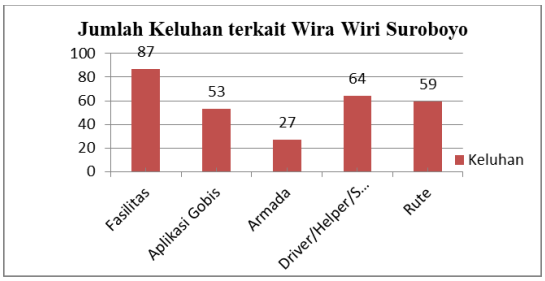

Figure.1 Number of Complaints related to Wira Wiri Suroboyo
Source: Instagram Wira Wiri Suroboyo

Based on the background described above and the existence of these problems, the author is interested in conducting research with the title " Attributes of Innovation in Public Transportation Services as a Feeder Transport Mode in the City of Surabaya (Case Study: Feeder Wira Wiri Suroboyo)".

II. RESEARCH METHODS

The research method applied is a qualitative approach that aims to describe phenomena by collecting data holistically (Sugiyono, 2013). The locus of this research is the Surabaya City Transportation Service and the Regional Technical Implementation Unit for Public Transportation Management (UPTD PTU). The focus of this research uses the theory of innovation attributes/characteristics according to Rogers in Suwarno (2008) which includes aspects of Relative Advantage, Compatibility, Complexity, Triability, and Observability. The data sources used are primary data sources and secondary data sources.

This research uses data collection techniques in the form of observation, interviews, and documentation. Researchers made observations regarding Wira Wiri Suroboyo's facilities, Wira Wiri Suroboyo's driver/helper services, the routes taken by Wira Wiri Suroboyo, the suitability of the Gobis application, and community participation in using Wira Wiri

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Suroboyo's services. The techniques for determining informants in this research are purposive sampling and accidental sampling. Apart from that, researchers also conducted interviews with several informants consisting of Surabaya City UPTD PTU Service Planning and Development Staff, Wira Wiri Suroboyo Helpers, Wira Wiri Suroboyo Supervisors and several Wira Wiri Suroboyo service users. The validity of the data in this research uses a credibility test using triangulation of sources, techniques, and time (Sugiyono, 2013). Meanwhile, the data analysis technique goes through four stages, namely data collection, data condensation, data presentation, and concluding (Miles and Huberman, 2014).

III. RESULT AND DISCUSSION

Innovation in public transportation services refers to the process of developing or implementing new ideas to improve the efficiency, comfort, safety, and sustainability of the transportation system used by the general public. The importance of innovation in public transportation services is because public transportation is an efficient and sustainable urban mobility tool. In this case, the Surabaya City Government and the Surabaya City Transportation Service have innovated in public transportation services in the form of the Wira Wiri Suroboyo Feeder on March 2, 2023. Researchers will describe and analyze based on the theory explained in the research literature review chapter so that from these results we can Constructive conclusions and suggestions are drawn. The focus of this research uses the theory of innovation attributes/characteristics according to Rogers in Suwarno (2008), which consists of Relative Advantage, Compatibility, Complexity, Triability, and Observability, as follows:

1. Relative Advantage

Relative Advantage according to Rogers in Suwarno (2008) is an indicator of the attribute/characteristic theory of innovation which can be achieved by knowing an advantage or benefit from the innovation with a greater value compared to previous innovations. The relative advantage in terms of Wira Wiri Suroboyo feeder public transportation innovation can be seen from the superiority of feeder innovation compared to other public transportation, economic benefits for users, and benefits in terms of comfort and safety provided.

Based on the results of research on relative superiority indicators, it was found that the Wira Wiri Suroboyo feeder transportation has advantages compared to other public transportation. This advantage can be seen from its aim, namely to reach remote places or community settlements, then the Wira Wiri Suroboyo feeder public transportation has clear stopping places or cannot stop at just any place which could cause traffic jams.

In terms of economic benefits for users, research results found that users of the Wira Wiri Suroboyo feeder public transportation have affordable fares for all levels of society, including pupils, students with disabilities, and others. Apart from that, in terms of benefits in terms of user comfort and safety, the research results found that users of the Wira Wiri Suroboyo feeder public transportation have experienced comfort and security supported by adequate infrastructure and provided helpers to accompany them. This situation can be measured from the availability and quality of facilities relative to standards (Pranata, 2013).

Thus, the indicator of relative advantage in innovation attributes/characteristics (Suwarno, 2008) through the Wira Wiri Suroboyo feeder public transportation service in Surabaya City has been fulfilled well and meets the aspects of relative advantage. This can be proven by the fact that transportation is superior to other transportation, rates are affordable for all groups, and has provided a sense of comfort and security to users of the Wira Wiri Suroboyo feeder public transportation service.

2. Compatibility

Innovations also have suitability or compatibility with the innovations they replace. This is intended so that innovation does not immediately ignore previous innovations. According to Fajrianti (2021), compatibility means the degree of conformity with the recipient's values, previous experience, and needs. Suitability in the Wira Wiri Suroboyo feeder public transportation service innovation can be seen from the suitability of the service to user needs and the suitability of the service to the use of the Gobis application.

In the aspect of compatibility of services to user needs, from the research results it can be found that some users still feel that there is a mismatch between services and user needs. This discrepancy can be seen from the fleet which is still small in number or does not meet the needs of passengers and routes that still do not reach several areas, one of which is North Surabaya. In the aspect of service suitability in using the Gobis application, the research results found that users monitor positions, routes or stops via the Gobis Application. However, for the elderly and iOS users, most of them just wait at the bus stop. Apart from that, some users feel that monitoring the feeder position sometimes does not match the actual feeder position. This application still often experiences down/maintenance so you need to close the app first.

Thus, the compatibility indicators in innovation attributes/characteristics (Suwarno, 2008) through the Wira Wiri Suroboyo feeder public transportation service in Surabaya City have not been fulfilled properly because they have not met the aspects of the suitability indicators. This can be seen from the existence of service incompatibility with user needs and service incompatibility in using the Gobis Application.

3. Complexity

Complexity is the level of difficulty for the recipient to understand and use the innovation, with its new nature the innovation has a greater level of complexity compared to previous innovations. However, because it is an innovation that offers a better and new way, this level of complexity is not an important problem. The complexity in the Wira Wiri Suroboyo feeder public service transportation service

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innovation is seen in terms of payment, provision of complaint services, and outreach carried out.

Based on the results of research on complexity indicators, it was found that Wira Wiri Suroboyo feeder transportation has relatively low complexity because many people have kept up with the times and are digitally literate so they feel that cashless payments make it easier, only for some people, such as students or people who haven't yet. Having an e-wallet or bank is still considered difficult. There is a complaint service provided by the Surabaya City Transportation Department for the public to report inconvenience in using the Wira Wiri Suroboyo feeder service. The complaint service is available on the call center number in the Wira Wiri Suroboyo feeder and Instagram account, either via DM or comments on the Wira Wiri Suroboyo post. Apart from that, to avoid complications or obstacles faced by Wira Wiri Suroboyo feeder passengers, socialization was held by Surabaya City Transportation Service officers or Surabaya City UPTD PTU. This socialization is offline by coming to sub-districts and sub-districts in the city of Surabaya as well as online socialization by sharing information or posts related to the Wira Wiri Suroboyo feeder service on the Wira Wiri Suroboyo Instagram social media account.

Thus, the indicator of complexity in the attributes/characteristics of innovation (Suwarno, 2008) through the Wira Wiri Suroboyo feeder public transportation service in Surabaya City is still relatively low, which can be seen from the ease of cashless payments, the complaint services and socialization provided.

4. Triability

In (Fajrianti, 2021) states that triability or the possibility of being tried can be understood as the degree to which an innovation is worth trying or not by users. The innovation must go through a "public test" stage, where everyone has the opportunity to test the quality of the innovation. So, to be quickly adopted, an innovation must be able to demonstrate (demonstrate) its superiority. Testability aims to reduce uncertainty by adapters regarding the innovation.

The trial aspect before launching was carried out by officers in March 2023 with the aim of introducing it to the public, testing the suitability of the fleet, as well as the route or road that the feeder will pass through. During the trial, the Wira Wiri Suroboyo feeder was free of charge. Many people were enthusiastic about this new public transportation so that all the fleets being tested at that time were full of passengers. The results obtained after the trial phase certainly attract public interest to try and use this service innovation. The number of users of the Wira Wiri Suroboyo feeder public transportation has increased, as can be seen from the number of fleets which are always full with lots of passengers and many people queue at bus stops to use the Wira Wiri Suroboyo feeder public transportation service.

Thus, indicators of the triability in the attributes/characteristics of innovation (Suwarno, 2008) through the Wira Wiri Suroboyo feeder public transportation service in the city of Surabaya have been fulfilled well. This can be seen from the trial phase that has been carried out by the Wira Wiri Suroboyo feeder service and the increase in users of the Wira Wiri Suroboyo feeder service.

5. Observability

Observability is the degree to which the results of an innovation can be seen by others. The easier it is for someone to see the results of an innovation, the more likely that person or group of people is to adopt it. Ease of observation will encourage people to assess whether the innovation is worth trying or not. The ease of observing this Wira Wiri Suroboyo feeder public transportation service innovation can be seen from the Standard Operating Procedures (SOP) of the services carried out, the services from drivers and helpers, as well as the facilities provided.

In the aspect of implementing Service Standard Operating Procedures (SOP), from the research results it was found that SOP implementation has been carried out clearly, it can be seen from drivers and helpers who are required to wear uniforms, transportation that must be operational from 05.30-21.00 WIB, officers opening the feeder doors , the officer gives a friendly welcome to passengers, then the officer directs them regarding payment. The SOPs for passengers include: no eating and drinking, no smoking, no cash payments, no pets, and no disturbing the comfort of other passengers.

In the aspect of driver and helper service, the research results found that some users still felt some unpleasant service from drivers or helpers to users of the Wira Wiri Suroboyo feeder service, which can be seen from the many complaints received by feeder managers, namely regarding the drivers who drive them. recklessly, sometimes even exceeding the maximum speed limit of 45 km/hour. Apart from that, there are still helpers who are not friendly and do not provide good service to users.

In terms of the facilities provided, research results found that the Wira Wiri Suroboyo feeder public transportation facilities in this unit are complete and all functioning. However, the supporting facilities, such as bus stops, are still not suitable because there are no seats or roofs to protect against rain or heat. This is not in accordance with research (Wibisono and Putri, 2022) that public transportation stops or commonly called bus stops are an inseparable part of the urban transportation system and part of the transportation infrastructure which is very important and needed by the community to change modes or transportation and reach other public transportation.

Thus, the convenience indicators observed in the attributes/characteristics of innovation (Suwarno, 2008) through the Wira Wiri Suroboyo feeder public transportation service in the city of Surabaya have not been completely running well. This can be seen from the aspect of driver and helper service which is still less than pleasant and the facilities in the form of bus stops are still inadequate.

IV. CONCLUSIONS

Based on the results and discussion that have been presented regarding the innovation of the Wira Wiri Suroboyo

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feeder public transportation service in the city of Surabaya which was researched using the innovation attribute theory proposed by Rogers in Suwarno (2008) based on the research focus, namely Relative Advantage, Compatibility, Complexity, Triability, and Observability, the conclusion is that the Wira Wiri Suroboyo feeder service can be said to be innovative because it has fulfilled the innovation attributes, including the Relative Advantage aspect, wherein the Wira Wiri Suroboyo feeder public transportation service innovation attributes it can be said to have been fulfilled well, seen from the advantages What the Wira Wiri Suroboyo feeder public transportation as compared to other public transportation in the city of Surabaya, affordable fares for all groups, and a sense of satisfaction in providing comfort and safety to users. In the aspect of compatibility in the Wira Wiri Suroboyo feeder public transportation service innovation attribute, it can be said that it has not yet been fulfilled properly, seen from the lack of fleets to meet the number of feeder users and the inaccessibility of certain points in the city of Surabaya. Apart from that, the Gobis application as a service support cannot be downloaded via iOS, the application is still often down and under maintenance. In the aspect of complexity in the Wira Wiri Suroboyo feeder public transportation service innovation attribute, it can be said to be minimal complexity because users feel that cashless payments in the feeder service make it easier. A complaint service is provided and there is also outreach carried out, both offline and online. In the Triability aspect, the Wira Wiri Suroboyo feeder public transportation service innovation attribute can be said to have been fulfilled well, as seen from the initial trial of the service to users which caused people to be curious and want to try. Apart from that, there is an increase in the number of Wira Wiri Suroboyo feeder users every month. And in the aspect of Observability in the Wira Wiri Suroboyo feeder public transportation service innovation attribute, it can be said that it is still not running well, even though there is an SOP implemented regarding this feeder service, there are still complaints regarding poor service from drivers and helpers to users. Apart from that, the facilities to support this service are still not suitable, namely several bus stops do not have protective roofs or seating.

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