

PANDEMIC EFFECT ON MULTIMODAL MOBILITY CHANGE

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Abstract

The Covid-19 pandemic has had an impact on various sectors of life, including education, the economy, and transportation. There has been a change in the mobility pattern of transportation users, including users of public transportation. One group of users of multimodal transportation, namely employees who work from the office or WFO, experienced changes in mobility due to concerns about the risk of being exposed to the Covid-19 virus when using public transportation. This study aims to examine changes in the mobility of multimodal users before and during the Covid-19 pandemic, which was carried out using a phenomenological qualitative approach through interviews. Respondents in this study were several WFO employees, who used multimodal transportation to and from work. This study shows that there is a change in the mobility of WFO employees when using multimodal transportation before and during the Covid-19 pandemic. These changes are the impact and strategies of respondents to overcome worries and feelings of insecurity when using public transportation facilities. To overcome these concerns and insecurities, respondents tried to minimize the risk of being exposed to the Covid-19 virus when using public transportation facilities.

Keywords: mobility; public transportation users; multimodal; Covid-19 pandemic.

Abstrak

Pandemi Covid-19 berdampak pada berbagai sektor kehidupan, baik pendidikan, ekonomi, maupun transportasi. Terjadi perubahan pola mobilitas pengguna transportasi, termasuk pengguna transportasi umum. Salah satu kelompok pengguna transportasi multimoda, yaitu karyawan yang melakukan work from office atau WFO, mengalami perubahan mobilitas akibat kekhawatiran akan risiko terpapar virus Covid-19 saat menggunakan transportasi umum. Penelitian ini bertujuan untuk mengkaji perubahan mobilitas pengguna multimoda sebelum dan selama pandemi Covid-19, yang dilakukan dengan menggunakan pendekatan kualitatif fenomenologis melalui wawancara. Responden pada studi ini adalah beberapa karyawan WFO, yang menggunakan transportasi multimoda saat berangkat dan pulang kerja. Penelitian ini menunjukkan bahwa terjadi perubahan mobilitas pegawai WFO saat menggunakan transportasi multimoda sebelum dan selama masa pandemi Covid-19. Perubahan tersebut merupakan dampak dan strategi responden untuk mengatasi kekhawatiran dan perasaan tidak aman saat menggunakan fasilitas transportasi umum. Untuk mengatasi kekhawatiran dan rasa tidak aman tersebut, responden berupaya meminimalkan risiko terpapar virus Covid-19 saat menggunakan fasilitas transportasi umum.

Kata-kata kunci: mobilitas; pengguna transportasi umum; multimodal; pandemi Covid-19.

INTRODUCTION

On December 31, 2019, China reported a mysterious case of pneumonia of unknown cause. In a period of 3 days, the number of patients with these cases amounted to 44 patients and continues to grow, which until now has reached millions of cases. These patients were studied and the results obtained indicated the presence of corona virus infection. On February 11, 2020, the World Health Organization declared the existence of Corona Virus Disease 2019 or abbreviated as Covid-19. Researchers at the Institute of Virology in Wuhan have carried out a metagenomic analysis to identify the coronavirus as a potential etiology, and they are calling it the novel coronavirus 2019 or nCoV-2019. Furthermore, the US Centers for Disease Control and Prevention (CDC) referred to the coronavirus as the novel coronavirus 2019 (2019-nCoV), and it is now known as coronavirus disease-19 (Covid-19) (US Department of Health and Human Services, 2020). As of January 2021, 2.08 million people have died in the world out of a total of 96.2 million cases due to this virus. In Indonesia, there were 965,283 people who were detected positive and this number is expected to continue to grow.

Based on available data, it can be seen that about 3% of the total world population who died due to exposure to Covid-19. This shows that what is dangerous about Covid-19 is not only the death it causes, but also its very fast spread. In Indonesia, in the last week of December 2020, for example, there were more than 700,000 cases.

Looking at the available data, it is natural that the policy of limiting activities is carried out by local governments, both at the provincial and district/city levels, through the large-scale social restriction scheme (Pembatasan Sosial Berskala Besar, PSBB). Just two weeks after the first case was announced, President Joko Widodo asked for activities outside the home to be moved to the home, including studying, working, and praying. Several regions immediately followed up, by implementing PSBB and work from home (WFH) policies in the regions. The policies implemented have brought changes to the pattern of community mobility.

However, PSBB also harms people who have to continue working, even though the area is declared a pandemic status, in order to survive, especially for those who have to use public transportation, because that is the only mode of transportation they can use. This is of course different from private car users, who use closed and more private vehicles, so they can reduce the risk of being exposed to the Covid-19 virus. PSBB and WFH policies have an impact on community mobility. In addition, there has been a change in people's behavior in using transportation which is a direct impact of the Covid-19 pandemic.

In July 2020, the Government made a policy of easing PSBB or what is called the new normal phase. During the new normal period, people are allowed to carry out activities by following the health protocols that have been regulated by the Government. In July, workers are allowed to do Work from Office (WFO), which is to return to work in the office or

original place of work with operating hours determined by each company. In addition, tourists who are currently facing the Covid-19 pandemic and undergoing the new normal will be more selective in considering the mode of transportation they will use and they also state that health is the most important factor (Algadrie, 2020).

Transportation is an effort to move or move people from the origin to the destination location for certain purposes by using certain modes of transportation (Miro, 1997). This transportation is the lifeblood of people's daily lives, because everyone needs transportation to fulfill their daily needs, such as working, going to school, and doing social interactions. The need for these activities ultimately encourages someone to choose the mode of transportation used.

In this study, a review was carried out on the impact of the Covid-19 pandemic on changes in the mobility of people using multimodal transportation. Multimodal transportation is transportation that uses at least two different modes of transportation in one round trip or trip. Specifically, it was examined whether the changes that occur are caused by mere rules or because of something more profound.

Research Method

This study uses a qualitative approach with phenomenological methods. Qualitative research is scientific research that aims to understand a phenomenon that exists in a natural social context, by prioritizing the process of deep communication interaction between a researcher and the phenomenon under study (Herdiansyah, 2012).

The phenomenological method is a method on a qualitative approach, which aims to clarify the situation experienced by individuals, by exploring their experiences in detail to find the psychological meaning contained in a phenomenon (Smith et al., 1999).

The data collection technique used in this study is to conduct interviews. In particular, information was collected through lengthy interviews with several respondents, numbering between 5 and 25 people (Polkinghorne, 1989). Characteristics of respondents in this study are employees who are WFO (working from the office) who use multimodal transportation to go or come home from work. The number of respondents in this study were 6 people with an age range of 24 years to 43 years, with one male and 5 female.

RESULTS AND DISCUSSION

There are several themes obtained from the interviews, namely changes in mobility and the type of multimodal transportation used before and during the pandemic, the emergence of concerns and feelings of insecurity experienced by respondents when using public transportation facilities during a pandemic, and strategies undertaken by respondents to overcome concerns and feelings of insecurity.

Changes in Mobility and the Type of Multimodal Transportation Used

In Table 1, it can be seen that there are changes in mobility and the type of multimodal transportation used before and during the pandemic. This is influenced by concerns, feelings of insecurity, and the existence of regulations from the Government. Regarding concerns and insecurity, respondents prefer to take the bus during the pandemic rather than take the electric train, which was previously used as a means of transportation before the pandemic. The reason is that buses are considered to have a lower risk of contracting the Covid-19 virus compared to trains.

Table 1 Participant and Mobility Changes

Subject	Type Sex	Age	Multimodal Before The Pandemic	Multimodal During A Pandemic
SH	F	24 years old	Ojek online, bus	Private motorbike, bus
RY	F	43 years old	Online motorcycle taxis, public transportation, electric trains	Online taxis, online motorcycle taxis, public transportation, electric trains
HE	F	29 years	Electric trains, online motorcycle taxis	Electric trains, online motorcycle taxis
SK	F	37 years old	Private motorbike, electric rail train	Private motorbike, bus
JR	F	24 years old	Private car, Transjakarta bus, online motorcycle taxi	Private car, online motorcycle taxi
HA	M	24 years old	Angkot, private motorbike, electric train	Private motorbike

Other respondents also switched from online motorcycle taxis to online car taxis, even though they had to pay more, because they considered online motorcycle taxis to be safer in keeping the distance between drivers and passengers to minimize the risk of being exposed to the covid-19 virus. Changes in mobility and modes of transportation used were also caused by regulations from the Government at the beginning of the Covid-19 pandemic, which prohibited online motorcycle taxis to transport passengers. Previously, respondents used online motorcycle taxis, and because of the regulation, they used private motorcycles.

Government regulations also cause respondents to leave home early, due to restrictions on Transjakarta bus passengers. In addition, leaving early will avoid queues of prospective passengers. This is in line with the research results of Przybyłowski et al. (2021), that the pandemic has an impact on changes in the mobility of public transport users.

The Government Regulation, on limiting the number of passengers on public transportation, is also considered appropriate. Transport restriction policies dramatically change people's mobility patterns, such as their daily behavior related to the use of transportation services (Herrera-Valdez et al., 2011).

Worry and Insecurity

Table 2 shows that all respondents have concerns and insecurity about being exposed to the Covid-19 virus when using public transportation. They considered that not all public transport users followed the health protocols properly. For example, on electric trains (KRL), passengers who do not get seats stand or curl up without maintaining a safe distance.

Table 2 Source of Concern and Insecurity for Multimodal Users During A Pandemic

Subject	Source of Worry and Insecurity
SH	There are still fellow bus users who do not comply with the health protocol.
RY	Angkot and KRL users are still crowded, especially during the hours of leaving and coming home from work
HE	There are still fellow KRL users who do not comply with the health protocol
SK	There are still fellow KRL users who are still crammed and don't keep their distance
JR	There are still fellow Transjakarta bus users who have not complied with the health protocol, for example, not keeping their distance
HA	There are still fellow Transjakarta bus users who have not complied with the health protocol

Feeling safe from the risk of being exposed to the corona virus seems to be a priority for workers who work from office (WFO) and use multimodal transportation. Tarasi et al. (2021) stated that control policies during the Covid-19 pandemic were closely related to public safety awareness.

One respondent said that in the Covid-19 pandemic situation, he prefers to take a private vehicle to go to work. However, this was not possible due to the distance and energy factors, so there was no other choice, which made him end up using public transportation.

Respondents who use online motorcycle taxis also prefer to bring their own helmets and prefer online motorcycle taxis that have a barrier between the driver and passenger. This was done because of the fear and insecurity experienced by respondents about the risk of being exposed to the Covid-19 virus. The results of the research by Przybylowski et al. (2021) also show that the fear of being exposed to the virus is the biggest factor experienced by users of public transportation. In addition, the behavior of fellow public transport users is another factor that creates feelings of insecurity. The desire to return to using public transportation after the pandemic is correlated with 2 factors, namely a sense of security and a sense of comfort when using public transportation during the Covid-19 pandemic.

In general, respondents implemented stricter health protocols when using public transportation during the Covid-19 pandemic. This is in line with research from Darmawan et al. (2021), which shows that public transportation users have understood and implemented the health protocols required by the Government and related officials during the Covid-19 pandemic. However, it should be realized that not all transportation users have the same awareness to implement health protocols properly (Lois, 2021).

This behavioral change in transportation is generally a relatively new form of behavioral adaptation. Global research dealing with cross-cultural responses to Covid-19 is reporting mental health symptoms associated with Covid-19 or other causes of stress. Events associated with Covid-19 are also more associated with mental health symptoms than with other stress symptoms, particularly symptoms of post-traumatic stress disorder (PTSD), anxiety, depression, insomnia, and dissociation (Olf et al., 2021).

Strategies for Dealing with Worries and Insecurities

Based on Table 3, the emergence of concerns and feelings of insecurity experienced by work from office (WFO) employees, who use multimodal transportation, encourages

them to take several strategic steps to minimize the risk of being exposed to the Covid-19 virus. The strategy taken, among others, is setting the hours for leaving and returning from work, to avoid crowds, namely by leaving early or returning early. Respondents who use Transjakarta buses choose to leave early to avoid queues and have the opportunity to choose relatively empty seats. All respondents implemented strict health protocols when using public transportation, including using face shields, carrying hand sanitizers, and avoiding holding objects in public places.

Table 3 Strategies Carried Out by Multimodal Transportation Users during A Pandemic

Subject	Strategy
SH	Implement strict health protocols (double masks and hand sanitizers).
RY	Bring your own helmet if you take an online motorcycle taxi, choose an angkot that is empty of passengers even though you have to wait longer, choose to take the KRL from the first departure station to avoid crowding.
HE	Coming home early to avoid crowds during work hours, choosing to take the KRL from the first departure station to avoid cramming even though it is a bit far from home.
SK	Departing and returning from work is not like normal working hours to avoid crowds at the time of departure and return.
JR	Depart early because there are restrictions on transjakarta bus passengers, Bring your own helmet when riding an online motorcycle taxi, looking for a suitable seat Quiet.
HA	Take the train when it's low on users (weekends).

Respondents who are angkot users choose to wait for an angkot that is empty of passengers, even with the risk of a long waiting time. This is done to avoid public transportation that is full of passengers, so there is a risk of being exposed to the Covid-19 virus. Respondents who use electric rail trains (KRL) prefer trains that are still empty, namely trains from Jakarta that have dropped passengers in Bekasi, and do not take trains from Cikarang or take trains from Depok, because usually the trains are already full of passengers. In addition, respondents try to avoid eating and drinking activities as well as communicating on the train.

A study conducted in the UK also found that all demographic groups experienced increased distress at the start of the pandemic, which was followed by a significant decline due to social distancing policies. This decline may reflect psychological adaptation to the demands of the pandemic (Daly and Robinson, 2021).

CONCLUSIONS AND SUGGESTIONS

This study shows that the Covid-19 pandemic has caused changes in mobility and changes in the choice of multimodal transportation used. The Covid-19 pandemic has also caused concern and insecurity for work from office (WFO) employees, who use public transportation. They see that their fellow public transport users are still indifferent, even

though the health protocol standards have been socialized by public transport operators and the government. Worries about the risk of being exposed to the Covid-19 virus have encouraged work from office (WFO) workers who use multimodal transportation to take several strategic steps to minimize the risk of being exposed to the Covid-19 virus.

Therefore, it is necessary to regulate and enforce rules related to the pandemic situation. For example, there is a regulation regarding departure and return hours from the workplace, which regulates that there is no accumulation of passengers so that there is no overcrowding. In addition, there is a need for the integration of transportation modes to support the effectiveness and efficiency of time and energy for multimodal transportation users.

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