

Daily Commute of Circular Migrant in Greater Jakarta: a Review

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Abstrak

Penelitian ini bertujuan untuk menjelaskan motif pekerja migran sirkular di Jabodetabek. Sebagai kota tujuan, Jakarta merupakan daerah yang jaraknya relatif dekat dengan kawasan Jabodetabek, dan pilihan transportasinya banyak. Para migran sirkular memiliki kondisi khusus, mereka hanya pindah untuk bekerja atau pendidikan tetapi tidak menetap di tempat tujuan. Penelitian ini menggunakan metode deskriptif untuk memahami fenomena mobilitas sirkular menuju Jakarta. Data dikumpulkan dari publikasi Badan Pusat Statistik dan wawancara mendalam. Hasil penelitian menunjukkan bahwa mayoritas komuter ke Jakarta berasal dari Kota Depok dan Kota Bekasi. Motif komuter adalah untuk bekerja (83 persen) dan pendidikan (17 persen). Besarnya proporsi komuter dengan status aktivitas kerja sebelumnya menunjukkan bahwa faktor ekonomi, terutama pendapatan yang lebih tinggi, masih menjadi alasan utama untuk melakukan komuter. Migran keliling lebih memilih jalur kereta api listrik (KRL) karena relatif cepat, murah dan bebas kemacetan. Tingginya tingkat kemacetan di Jakarta memaksa para komuter untuk memilih moda transportasi yang paling menguntungkan.

Kata kunci: Migrasi, Mobilitas penduduk, Mobilitas sirkuler, Komuter, Transportasi massal, Jakarta

Abstract

This research aims to explain the motive of the circular migrant worker in Greater Jakarta. As a destination city, Jakarta is an area with a relatively close distance to the Greater Jakarta area, and there are many choices of transportation. The circular migrant has an exceptional condition: they only move to work or education but do not settle in the destination. The study uses descriptive methods to understand the phenomenon of circular mobility to Jakarta. The data collected from the publication of Statistic Indonesia and in-depth interviews. The results showed that the majority of commuters to Jakarta came from Depok City and Bekasi City. The motives of commuters are for work (83 per cent) and education (17 per cent). The large proportion of commuters with the prior status of work activities shows that economic factors, especially higher income, are still the main reason for commuting. Circular migrant prefers electric railroad line (KRL) because it is relatively fast, cheap and free from traffic jams. The high level of traffic congestion in Jakarta forces commuters to choose the most profitable mode of transportation.

Keywords: Migration, Population mobility, Circular mobility, Commuter, Mass transportation, Greater Jakarta

INTRODUCTION

Indonesia's transportation sector faces challenges on a national, regional and global scale. This challenge is the impact of the development of the global economy

and the increasingly sophisticated information and communication technology. Therefore, transportation as an order for social mobility, culture, economy, and defense and security is faced with demands for speed, reliability, efficiency, and high competitiveness. In an increasingly unified world, the physical network of national transportation services is a subsystem of regional and global service networks.

As the centre of the Indonesian economy, Jakarta is the main destination for migrant, especially the mobility of the non-permanent migrant or more popularly known as circular mobility. Migration into urban areas is closely related to development policies that are biased by the city. Developments in Jakarta have attracted residents to this city to get job opportunities, especially when employment opportunities in their home areas are very limited.

Circular migrants generally arise because of economic opportunities in the destination area, but they are still reluctant to leave their area of origin for various reasons. Circular migrants are migrants who leave their original area only to earn a living and assume that their permanent residence is in their area of origin (Jellinek, 1978). Circular migrant time limits can be divided daily, weekly and monthly as long as it does not exceed six months. The number of circular migrants entering Jakarta from year to year always shows an increase. Statistical data shows that the population of the city of Jakarta reaches 9.6 million people (BPS, 2010), but during working hours during the day, the population can reach 14.5 million people. Thus, the number of residents is circular labour migrants, who are only in Jakarta during working hours and then return to their regions in the afternoon or evening.

Urban problems, such as congestion caused by rapid population growth and high urbanization flows, are common problems in big cities like Jakarta. The smart city concept has developed and is starting to be implemented in several big cities in Indonesia, including Jakarta. One part of the smart city concept is smart mobility, which is currently developing to solve various urban problems, especially in public transportation to improve the quality of services that are effective and efficient (Sifa Novwidia Agni et al., 2021)

One of the most challenging aspects of the smart city is mobility. In truth, most major cities throughout the world continue to struggle with urban mobility issues, particularly traffic congestion. Traffic congestion is a serious issue in Jakarta, Indonesia, and it has a severe impact on productivity and inhabitants' overall quality of life. The transportation domain in Jakarta has established a digital transportation ecosystem as a result of the development of information, communication, and technology (ICT), as seen by the creation of new digital-based transportation services (Mukti & Prambudia, 2018).

Electric Rail Train (Kereta Rel Listrik / KRL - in Bahasa Indonesia) is one of the mainstay modes of transportation for circular migrants (commuters). Morning and evening are the peak density in this mode of transportation. Thousands of electric rail train users crowded the train cars in the morning to go to Jakarta and leave Jakarta in the afternoon and into the evening (Erlangga, Istiantara, & Nugroho, 2020). One electric rail train carriage, which normally can carry 250 passengers at that peak hour, can increase up to two to three times. Nevertheless, the condition of the Electric rail train, which is always full, does not dampen the interest of its users because this mode is the fastest and cheapest mode to go to and leave Jakarta. The results of the BPS (2014) survey show that the main job status of most commuters heading to Jakarta is working (83 per cent), and the rest are in school (17 per cent). The

commuters who use Electric rail train services come from buffer areas around Jakarta, namely Bogor, Depok, Tangerang, Serpong and Bekasi.

The role of electric rail train for commuters to Jakarta is indeed very crucial, and this is the reason for writing this study. Commuters to Jakarta are not always a burden to the city, but they are the drivers of the economy. Without the presence of these commuters, economic activities will not be able to run. Even from an urban perspective, the presence of these commuter workers can have a positive impact on Jakarta because they do not live in the city, thereby reducing population density. It also has a positive impact on the area around the city; the suburbs of Jakarta are increasingly developing as a place for commuters to live and can even become a satellite city. This link between commuters and economic development requires comprehensive handling, including providing good modes of transportation to support their mobility.

This paper attempts to explain the role of electric rail train in the circular mobility process of migrant workers. Actors of circular mobility or commuting carry out their daily activities outside the city of residence and regularly go and return to their place of residence on the same day. In this study, commuters come from several cities around Jakarta, namely Bogor, Depok, Tangerang and Bekasi. The commuters studied are commuters whose main activity status is to work in Jakarta for at least one hour in the last week and is carried out continuously without interruption. The flow of commuters to Jakarta, of course, requires a supporting mode of transportation. Electric rail train is one of the modes of mass transportation that can facilitate commuting quickly, efficiently and cheaply. The explanation in this study aims to understand the relationship between circular mobility in Jakarta and electric rail train transportation modes as a means of support.

LITERATURE REVIEW

1. The Role The Transportation System

Transportation moves people, goods, and information from one place to another using facilities (Warpani, 2002). What must be considered is the balance between the capacity of the mode of transportation (fleet) and the number or volume of goods and people who need transportation. If the fleet capacity is lower than required, many goods and people will not be transported. Therefore, transportation has a very important and strategic role in supporting, encouraging and supporting all aspects of life in the economic, social, political, and defence and security fields. The land transportation system is part of the national transportation system, an organized arrangement consisting of modes with the same service area on the mainland. In the transportation system in Indonesia, land transportation includes road transportation, rail transportation, river and lake transportation and crossings.

The role of transportation in Kadir (2006) research can be divided into three parts:

- The role of transportation for the mobility of goods: transportation for the mobility of goods is more oriented towards economic activities. The role of transportation here is more directed at distributing production results from producers to consumers, from areas that are excessive to areas lacking, and facilitate the socio-economic life of an area.
- The role of transportation for the mobility of people: the existence of transportation facilities and infrastructure will narrow the space, so that long distances become close and easy to reach. With the role of transportation facilities

and infrastructure, it will trigger people to travel, which causes the frequency of trips to increase.

- The role of transportation in politics, defence and security: transportation will strengthen defence and security. With the support of a reliable transportation system, the nation's sovereignty will be maintained. In addition, transportation can also be used in emergencies such as natural disasters.

The train is one of the cheap and fast modes of transportation and has existed since the days of the Dutch East Indies. According to historical records, in 1917, the Staats Spoorwegen (SS) railway company was operating and serving the Tanjungpriok-Meester Cornelis (Jatinegara) line, the pioneer of the current train line. Then to serve economic activities, the Dutch East Indies Government operated several electric locomotives to pull a train series. After that, in 1927, Jakarta already had a electric rail train that circled the city and expanded to the Bogor line. However, the glory of the electric train in Jakarta had dimmed and was only revived in 1976 using a Japanese-made electric rail train model.

Currently, the electric train operator in Indonesia is PT Kereta Commuter Indonesia, a subsidiary of PT Kereta Api Indonesia (Persero) which manages the Jabodetabek Commuter Train. The company already has 758 electric rail train units, and it is planned to increase every year in line with the increasing demand. Adding electric rail train units is carried out because the average daily electric rail train users reach 993,804 people on weekdays at 75 stations throughout Jabodetabek. Looking at the number of electric rail train users, it is not wrong if electric rail train is referred to as a mode of transportation for circular migrants working in Jakarta.

2. Urbanization and Mass Transportation

The increasing urbanization process is inseparable from urban development policies, especially economic development developed by the government (Manning & Effendi, 1985; Ciptoheriyanto, 1997). As is known, the increase in population will be positively correlated with increasing urbanization in an area. There is a tendency that economic activity will be concentrated in an area with a fairly high population concentration. This positive relationship between population concentration and economic activity will cause population concentration to increase, giving rise to what is known as urban areas (Bintarto, 1984).

It can be seen that there is a reciprocal relationship between economic activity and population concentration. Economic actors tend to invest in areas that already have a high concentration of population and have complete facilities and infrastructure (Soetomo, 2002). Because by doing so, they can save on various costs, including distributing goods and services. On the other hand, residents will tend to come to the centre of economic activity because they will more easily get the opportunity to find work. Thus, urbanization is a natural process of change to improve the welfare of the population or society.

Circular mobility is one of the impacts of urbanization, where an area has increasingly shown urban characteristics and has higher economic growth. Circular mobility is formed because of the distance factor; the closer the distance between the area of origin and the destination area, the more there will be a tendency for daily or commuting circular mobility (Giyarsih, 1999; Rustariyuni, 2013). Then this distance factor will be influenced by the existence of transportation facilities and

infrastructure. For example, the existence of electric rail train in Jabodetabek will further increase the flow of commuters to Jakarta.

RESEARCH METHOD

This study's qualitative study uses a descriptive method to understand the phenomenon between the Jabodetabek KRL and Jakarta's circular mobility. The descriptive method is a research method that seeks to explain the activities, objects and people involved. The descriptive method is associated with collecting data, identifying and predicting the relationship between variables. In addition, qualitative research can connect ideas, perceptions, and opinions in the form of numbers. Data were collected from various literature studies and data publications from various agencies.

RESULT AND DISCUSSION

The flow of people to Jakarta is indeed difficult to control. As an economic centre city, Jakarta inevitably continues to attract newcomers to fill various existing job sectors. The increasing percentage of circular migrants in Jakarta, of course, requires a mode of transportation that can facilitate their mobility. This is what makes Indonesia's transportation sector face challenges on a national, regional and global scale and various external challenges that impact global economic developments and increasingly sophisticated information and communication technology. Therefore, transportation as an order for social mobility, culture, economy, and defence and security is faced with demands for speed, reliability, efficiency, and high competitiveness. In an increasingly globalized world, the physical network of national transportation services is a subsystem of regional and global service networks.

1. Commuting: Circular mobility motive

The development of the economy, technology, information and transportation has increased commuters in several big cities, including Jakarta. Commuters have a special characteristic; they only move from place to place for work or education but do not stay in the destination area. The migration flow formed is of daily duration with a round-trip pattern (Abel & Sander, 2014) This commuter migration pattern has a negative impact, reducing urban population density and triggering satellite cities around the main city.

Based on Jabodetabek commuter migration data (BPS, 2010), the percentage of commuters is 12.7 per cent and non-commuters 87.3 per cent. Of the 12.7 per cent of Jabodetabek residents who commute, Depok City and Bekasi City residents do the most commuting, 20 per cent compared to non-commuting. The commuters' motives were for work (83 per cent) and education (17 per cent). The large proportion of commuters with the main activity status of work shows that economic factors are still the main reason for commuting. Circular migration with economic motives is based on the expectations of commuters to earn higher incomes than in their home areas.

The Jakarta metropolitan region contains a large number of daily commuters from the municipalities of Bogor, Depok, Tangerang, and Bekasi (JABODETABEK). The first Light Rail Transit (LRT) is introduced in Jakarta; the first phase serves the eastern portion of the city and Dukuh Atas (Jakarta CBD). The majority of commuters prefer private vehicles (cars and motorcycles) to public transportation. Motorcycles have a greater accident rate than other types of transportation. In this study, a travel diary survey records the commuting pattern (potential LRT passenger), which aids stakeholders in

network optimization(Tjahjono et al., 2020).

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This migration process is related to Lee (1966) study of migration theory. According to push and pull factors of migration, migration generally occurs because of differences in utility between two regions. Areas of origin with negative utility values will encourage residents to migrate to other areas with positive utility values. This positive value of the migration destination is called the migration pull factor. Naturally, the population will move to the area with the highest benefit for him. Because the intermediate variables are considered non-existent with the progress of transportation facilities, the migration that occurs is daily circular migration.

The results of Kurniawan (2016) study regarding the circus pilot of the 2014 Jabodetabek Commuter Survey show that the main motive of commuters is for economic purposes. As a destination city, Jakarta is an area with a relatively close and affordable distance to the area of origin, and there is a electric rail train line. The results of a study by Setyodhono (2017) also illustrates that commuter workers generally prefer electric rail train because it is relatively fast, cheap and free of traffic jams. The high level of congestion in Jakarta forces commuters to choose the most profitable transportation mode.

When COVID-19 entered Indonesia, the number of electric rail train users decreased by 80 percent due to the government's restrictions on mobility. However, after easing the number of Electric rail train users, the number of electric rail train users has increased again. The results show that the factors that influence the decision to use electric rail train services during the COVID-19 pandemic are the variables of completeness of health protocols (83%), frequency of number of departures (84%), convenience of payment methods (86%), convenience (83%), affordable cost (90%), safety factor (81%) and a sense of security from crime at the station (86%) (Monica, Sukanta & Winarno, 2021). For users of public transportation, electric rail train makes mobility easier. Despite the requirements to access electric rail train, people still consider this mode of transportation the cheapest and safest in the pandemic situation.

Other study found that the availability of a friendly and predictable timetable, as well as pedestrian facilities, encourage commuters to switch to active transportation. If they have a well-designed pedestrian network and facility, 42 percent of respondents are willing to walk 300 meters rather than use a motorcycle taxi for their first and last mile. Commuters (17%) require public transportation integration, which allows them to switch from one mode to another. Commuters may be attracted by pricing strategy; 69 percent of respondents prefer a zoning system to a flat tariff system. Tariff difference (e.g., concessions, off-peak tickets) may cause commuter travel patterns to vary, assisting public transportation efficiency and optimization.

2. Electric trains: The solution for good?

PT KAI Commuter Jabodetabek since 19 September 2017 has changed its name to PT Kereta Commuter Indonesia is one of the subsidiaries within PT Kereta Api Indonesia

(Persero) which manages the Jabodetabek Commuter Train and its surroundings. KCJ was formed in accordance with Presidential Instruction No. 5 of 2008 and the Letter of the Minister of State-Owned Enterprises No. S-653/MBU/2008 dated August 12, 2008. The change of name to KCI was contained in the minutes of the General Meeting of Shareholders on September 7, 2017, which also received the approval of the Minister of Law and Human Rights of the Republic of Indonesia on the Amendment to the Articles of Association of Limited Liability Companies with Decree Number of the Minister of Law and Human Rights of the Republic of Indonesia No.AHU-0019228.AH.01.02. of 2017 dated 19 September 2017.

After Indonesia's independence, electric locomotives still operate around Jakarta. But finally, the age of the train which has reached half a century, and no new electric locomotives are added, making transportation by electric locomotives no longer adequate. The Jabodetabek Railways then became familiar with the Japanese-made KRL series which began operating in 1976.

Rail transportation in Indonesia in general and Jakarta in particular has a long history. Electric Rail Train (KRL), Mass Rapid Transit (MRT) and Light Rail Transit (LRT) are developments of today's rail transportation modes. The development of transportation is inseparable from the interests of the colonizers in exploiting Indonesian crops. Until that time, the train became a cheap mass transportation. The railroad in Jakarta was started in 1869 until 1873. The construction of the railway line was intended for the transportation of agricultural products in the Buitenzorg area to Batavia or vice versa. In its development, trains are considered capable of also playing a role as labor transportation and then developing again into mass transportation in DKI Jakarta (Jumardi et al., 2020).

Electric Rail Train (KRL) is a mode of mass transportation that operates in the Greater Jakarta area under the name Commuter Line. Based on data from PT KAI Commuter Line Jabodetabek (KCJ), KRL passengers in 2015 reached around 850,000 people per day, while for 2019 PT KCJ has a target number of passengers of 1.2 million people per day. However, the number of passengers on the Jabodetabek KRL is still relatively small when compared to the number of users of other modes, especially private vehicles.

The use of public transportation modes in the Greater Jakarta area decreased along with the increasing use of private vehicles from 2002 to 2010 (The Coordinating Ministry of Economic Affairs; Japan International Corporation Agency, 2012). As a more efficient mode of fuel use and more environmentally friendly than motorcycles, private cars, and buses (Bradley, 2007), many efforts need to be made to improve the Jabodetabek KRL services so that more users of other modes of transportation switch to KRL.

As of December 21, 2015, the Jakarta Kota-Tanjung Priok KRL route was officially reactivated. There are still several other modes of public transportation operating on this route, causing the passenger load factor of KRL mode on the route to be small, with the number of passengers per carriage only reaching about 30 passengers for each trip, even though the maximum capacity per carriage for trains used on the Jakarta route City-Tanjung Priok is 160 people. Thus, there is the potential for passenger transfer from other modes to KRL, if KRL is more attractive than the other modes. With the introduction of the Electric Rail Train on the Jakarta Kota-Tanjung Priok route at the end of 2015, it is expected that passengers from other modes will switch to the Electric Rail Train (Yandito & ., 2019).

The study results show that electric rail train is one of the best modes of transportation for commuters to Jakarta. Electric trains are considered to be a fairly effective option as a mode of transportation (Khodaparastan & Mohamed, 2018). There are a number of advantages that electric trains have over diesel trains, including being more flexible, easier and simpler to maintain, and having better acceleration than diesel trains. The train can also run well on various types of slopes, so the track can be made "underground" or "elevated" above the ground. The approximate travel time it takes for the electric train to cover a distance of about 30 kilometers is about 20 to 30 minutes. The train is estimated to be traveling at a speed of about 70 kilometers per hour.

A single conventional boxcar outfitted with a 14-MWh battery and inverter can travel 241 kilometers while utilizing half the energy used by diesel trains. Battery-electric trains can compete with diesel-electric trains at near-future battery pricing if environmental costs are included in, or if rail companies can access wholesale energy prices and make 40 percent use of fast-charging infrastructure. Switching to battery-electric power would save the US freight rail sector \$94 billion over the next 20 years, accounting for lowered criterion air pollutants and CO₂ emissions.

However, will it provide a solution for good? Especially if it is associated with the main problem in Jakarta, namely congestion. Findings in the field often describe several shortcomings of electric rail train, from schedule to convenience. It is undeniable that the increasing number of electric rail train users makes the electric rail train mode no longer comfortable, especially at certain hours. Moreover, when the weather is bad, it rains, the electric rail train often experiences signal disturbances, and of course, this hampers the speed of the commuters. Jakarta is ready for the application of intelligent mobility. However, improvements and procurement in some aspects of intelligent mobility are deemed necessary.

According to the Indonesian transportation community, electric rail train problems are the capacity and frequency of trains. These problems can be improved by adding existing tracks. However, it seems that there are still many obstacles due to limited land in Jakarta. Then to increase the convenience of commuter mobility, electric rail train should have a feeder mode such as an integrated bus or motorcycle taxi. If the electric rail train capacity has been added and integrated, the problems that electric rail train companies often experience can be minimized.

CONCLUSION

One of the impacts of globalization is that the flow of people from one place to another is getting easier and unlimited. Commuting is one of the impact phenomena of the globalization process. According to several studies on migration, population movement is unavoidable if the migration destination area has a strong pull factor. Jakarta as an economic centre is a destination for migrants in Indonesia, including commuters who live around Jakarta. The mobility of this commuter is highly dependent on the mode of transportation to Jakarta. One of the mainstay modes of commuter transportation is electric rail train which offers speed, convenience and low cost. However, over time, the electric rail train, of course, experienced a saturation point. Several electric rail train lines have been burdened with the number of passengers exceeding the carrying capacity and will be a problem in the future. One solution to this problem is to develop economic centres in various satellite cities so that the centre of economic activity does not rely on one city alone.

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