Journal of Geosciences and Environmental Studies: Vol. 1, No. 3, 2024, Page: 1-20

Transportation Mode Selection Preferences for Persons with Disabilities in the Disability-Friendly City of Yogyakarta

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DOI: https://doi.org/10.53697/ijgaes.v1i3.3258
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Received: 01-09-2024
Accepted: 15-10-2024
Published: 30-11-2024

Abstract: A disability-friendly city is a city that meets all the needs of people with disabilities according to service standards in education, health, employment, rehabilitation, social needs, and transportation. The Yogyakarta City Government has declared itself as a 'Disability Friendly City' since 2015. To fulfill the movement needs of people with disabilities, the Yogyakarta City government provides mass public transport, Trans Jogja. In addition to Trans Jogja, there are other modes, namely Difa Bike, two-wheeled private, public transportation, four-wheeled private, public transportation, and private vehicles. This study aims to determine the transportation mode selection preferences for persons with disabilities in Yogyakarta City as a Disability Friendly City. This study uses multiple linear regression analysis to determine the factors influencing persons with disabilities in choosing transportation modes. This study's findings state that most people with disabilities prefer private vehicle modes based on influential factors: travel destination, travel distance, travel time, transportation costs, and vehicle ownership.

Keywords: Disability, Mode Choice, Disability Friendly City

Introduction

Most studies on "Disability Friendly Cities" in Indonesia are always related to fulfilling disability rights (Maftuhin, 2017). A disability-friendly city means a city that provides all the needs of people with disabilities according to service standards, from education, health, employment, rehabilitation, social needs, and public transportation (Golant, 2024; Ma, 2023; Xu, 2024). Social Exclusion is the condition of marginalized groups in society who do not have the opportunity to participate fully in economic, social, political, and cultural aspects and the processes that lead to and maintain these conditions (United Nations, 2016). Many factors influence social exclusion, including ignorance, poverty, language barriers, and limited physical accessibility (Fernandes-Ferreira, 2020; Hayvon, 2024; Martinez, 2020; Prieto-Flores, 2021; Shah, 2023). There are many issues regarding marginalized people, such as equality, rights, justice, and welfare. (Jahangir, 2024). Persons with disabilities are one of the most highlighted concerns in Indonesia.

The Yogyakarta City Government proclaimed itself a "Disability Friendly City" in 2015. According to data from the Yogyakarta City Social Service, in 2022, there were 2,343 people with disabilities in Yogyakarta City. There are 710 people with physical disabilities, 175 people with visual impairments, 80 people with speech impairments, 618 people with intellectual disabilities, 496 people with mental disabilities, and 245 people with multiple disabilities (Dinas Sosial, Tenaga Kerja, dan Transmigrasi Kota Yogyakarta, 2022). Although the number of people with disabilities is only 0.56% of the total population in Yogyakarta City, the Yogyakarta City government needs to provide city transportation facilities and infrastructure for the needs of people with disabilities.

To move around Yogyakarta City, people with disabilities can use mass or private-public transportation, such as Difa Bike and private vehicles. Some options of mass public transportation for people with disabilities in Yogyakarta City, namely Trans Jogja, private-public transportation such as online motorcycle taxis such as GoCar or GrabCar, Difa Bike, and private vehicles such as motorcycles and private cars. Trans Jogja is one of the modes of transportation that is part of the cheap and fast Bus Rapid Transit (BRT) program around Yogyakarta. The route of this mode of transportation serves the area within the city of Yogyakarta to the border area between the town and the regency. GoCar or GrabCar is a private-public transportation mode that serves online passenger pick-up and drop-off services that are easily accessible to anyone.

Difa Bike is one of the innovations in shuttle services with motorbikes specially designed for people with disabilities (Fathan, 2022). This mode of transportation is a transportation service that is operated without a definite route and schedule depending on passenger demand. The uniqueness of Difa Bike is that the driver or driver is a person with a disability. In addition to public transportation and online transportation, people with disabilities also have the option of transportation modes by using private transportation for those who have it. However, there are various problems regarding transportation facilities and infrastructure in Yogyakarta because transportation is minimal, functions inefficiently, and operates below capacity. So, it is necessary to provide disability-friendly city transportation facilities and infrastructure that can meet the needs of people with disabilities to travel or move in safe, comfortable, and smooth conditions.

This study aims to determine the preferences for transportation mode selection for people with disabilities in Yogyakarta City, which is a disability-friendly city. From this research, it will be possible to know the characteristics of people with disabilities, the use of existing modes of transportation in their movements, and the factors that influence the selection of modes and needs. This research can be seen in terms of the preference for choosing transportation modes for people with disabilities in Yogyakarta City as a disability-friendly city.

Methods

This research is located in Yogyakarta City with people with disabilities who are the research sample, namely the physically disabled, the blind, the deaf, the speech impaired, intellectual disabilities, and mental disabilities. The analysis technique used is multiple linear regression analysis techniques with data collection techniques in this study through primary data collection techniques using researchers conducting direct research to the research location to obtain the required data. Researchers distributed questionnaires to respondents who were people with disabilities through the PERTUNI community (Persatuan Tuna Netra Indonesia) DPC Yogyakarta City, GERKATIN (Gerakan untuk Kesejahteraan Tuna Rungu Indonesia) DPC Yogyakarta City, PPDI (Perkumpulan Penyandang Disabilitas Indonesia) DPC Yogyakarta City, HWDI (Himpunan Wanita Disabilitas Indonesia) DPC Yogyakarta City, Difa Bike community, KPSI (Komunitas Peduli Skizofrenia Indonesia) Simpul Yogya, and POTADS (Persatuan Orang Tua Anak Down Syndrome) DPC Yogyakarta City.

The sample was determined using the quota sampling technique. The quota sampling technique decides samples from a population with specific characteristics up to the desired number (quota) (Neuman, 2003). The quota sampling technique is used because it can select a representative sample, which means that the sample selected from each stratum can represent the characteristics of the entire population. To fulfill the number of samples for each stratum, researchers use a general reference to determine the sample size. The sample is divided into categories of types of disabilities, namely the physically disabled, the blind, the deaf, the speech impaired, intellectual disabilities, and mental disabilities, with a sample size of 30 for each category.

The research variables used in this study consist of independent and dependent variables, which influence mode selection (Miro, 2008, 2005; Parmithi, 2015; Tamin, 2000). The following are the research variables used:

Table 1. Research variables

Indicators	Independent Variable (X)	Dependent Variable (Y)
Factors	Travel destination	Trans Jogja
Selection	Travel distance	Difa Bike
Mode	Travel time	Two-wheeled private, public transportation
	Vehicle ownership	Four-wheeled private, public transportation
	Transportation cost	Private vehicle
	Age	
	Income level	
	Role in Household	

Result and Discussion

A. Result

1. Characteristics of People with Disabilities in Yogyakarta City

a. Age

In general, respondents from the five types of disabilities, namely the physically disabled, the visually impaired, the speech impaired, intellectual disabilities, and mental disabilities, have the most variation in age range, namely respondents with disabilities and speech impairments. The most significant number of respondents are adults aged 26 - 45 years. However, each person with a disability has respondents with an adolescent age level of 12-25 years. All intellectual disability respondents were in the child age range. Meanwhile, blind respondents are in the age range of adolescents, adults, and older people. Respondents with mental disabilities were in the age range of adolescents, adults, and older people.

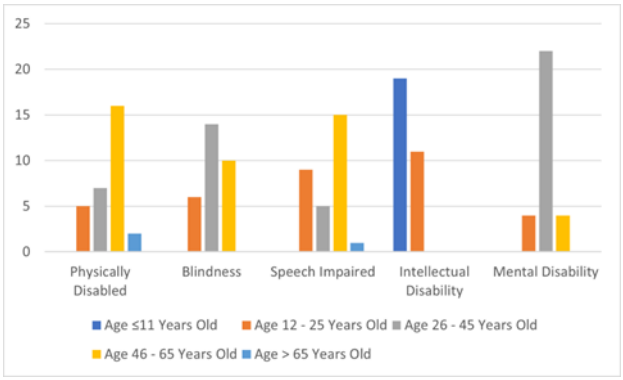

Figure 1. Age comparison of respondents with disabilities

b. Employment

Based on the type of work variation, respondents with disabilities can be categorized based on their movement time into routine work, work at home, incidental or as-needed work, and not working. Routine work means that people with disabilities carry out the purpose of work movement within a routine period and at the same time or repeatedly every time. Meanwhile, work at home means that people with disabilities work at home or do not carry out the purpose of work movement outside. Incidental work or as needed means that people with disabilities carry out work movement purposes only when there is an interest or as required within a period that can change. In addition, there are respondents with disabilities who do not work.

According to the study results, in general, of the respondents of the five types of disabilities, some respondents did not work, and the most significant number of respondents did not work, namely respondents with intellectual disabilities.

Respondents with disabilities who have many variations in types of work are blind and mentally disabled. However, on average, the most common type of work for respondents of the five types of disabilities is routine work. The physically disabled respondents had variations in routine work, incidental work, and not working, with the highest number of respondents having routine work. Blind respondents had variations in routine work, work done at home, incidental work, and not working, with most respondents having incidental/as-needed work. Deaf respondents have variations in routine work, incidental work, and not working, with the highest number of respondents having routine work.

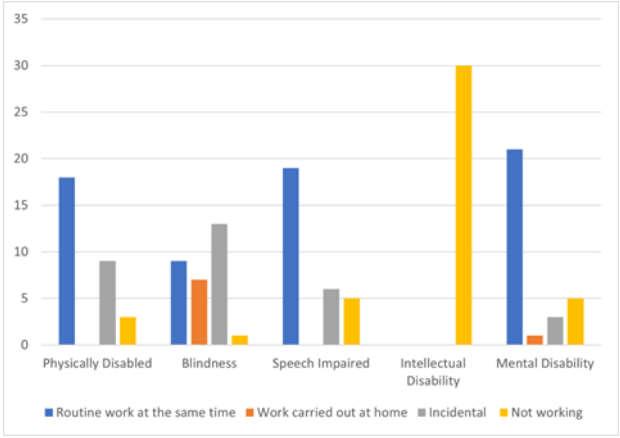

Figure 2. Comparison of the number of job types of respondents with disabilities

c. Income Level

When viewed from the economy of the movement actors, respondents of the five types of persons with disabilities have an average income level of IDR 1,500,000.00 - IDR 3,000,000.00. Respondents who have varying income levels have intellectual disabilities and mental disabilities. The most disabled respondents had an income level of Rp. 1,500,000.00 - Rp. 3,000,000.00. The most visually impaired respondents had an income level of < Rp. 1,500,000.00. Most speech-impaired respondents have an income level of Rp. 1,500,000.00 - Rp. 3,000,000.00.

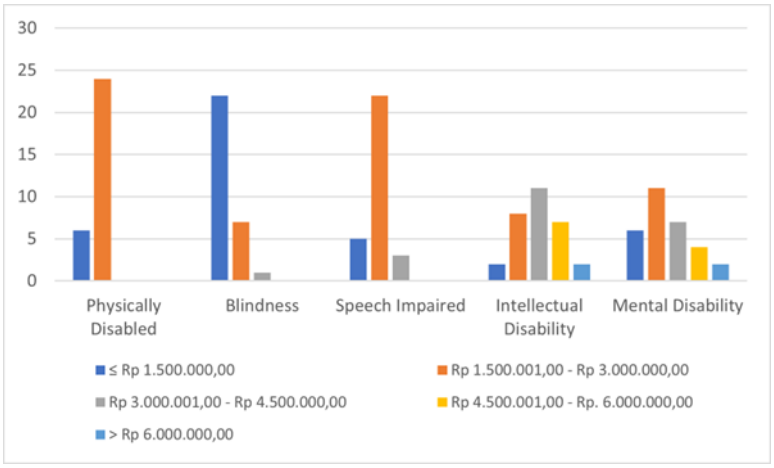

Figure 3. Comparison of income levels of respondents with disabilities

d. The Role of Persons with Disabilities in the Household

A person's role in a family consists of children, a wife, a mother, and a father. Husband and wife are for people with disabilities who are married but do not have children. Fathers and mothers are for people with disabilities who are married and have children. At the same time, the role of children is intended for people with disabilities who are not married. The following are the household roles of respondents with disabilities by type.

When viewed from the social character of the perpetrators of the movement, of the five respondents with disabilities who have many variations of roles in the family, namely respondents with physical disabilities, visual impairments, speech impairments, and mental disabilities. Respondents who have the most roles in the household as children are respondents with intellectual disabilities. Respondents with physical disabilities have many variations of roles in the household, with most respondents playing the role of mother. Visually impaired respondents have many variations of household roles, with most respondents playing the role of husband. Deaf respondents have many variations of roles in the household, with most respondents having the role of mother. Meanwhile, respondents with mental disabilities have many variations of roles in the household, with most respondents having the role of children and mothers.

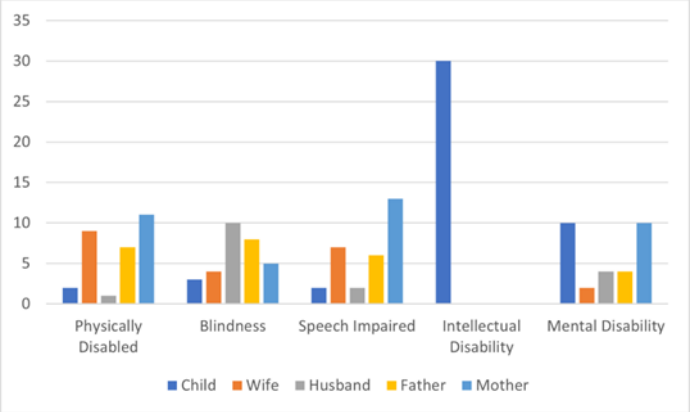

Figure 4. Household Roles of Respondents with Disabilities

e. Vehicle Ownership in the Family

When viewed from the economic character of the movement actors, respondents of the five types of persons with disabilities, on average, already have a private vehicle in their family. The average private vehicle owned by respondents with disabilities is a bicycle and motorbike, totaling around 1 to 2. Respondents who have the most variation of vehicle ownership in the family are respondents with hearing impairments, speech impairments, intellectual disabilities, and mental disabilities. Motorbikes were most commonly owned by each of the five types of respondents with disabilities. Respondents

with mental disabilities owned most motorbike vehicles, while other respondents owned bicycle and car vehicles. The following is the number of respondents with disabilities based on personal vehicle ownership.

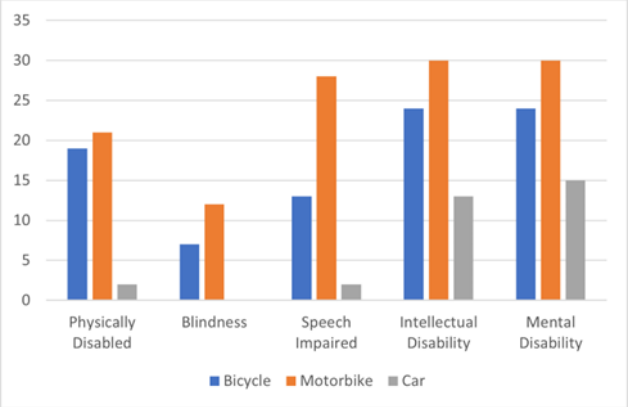

Figure 5. Number of Respondents with Disabilities Based on Ownership of Private Vehicle

f. Travel Distance

According to the study results, the average distance traveled by respondents of the five types of persons with disabilities has similarities and differences in the distance traveled for each trip purpose. The average travel distance of respondents of the five types of persons with disabilities has similarities in the purposes of movement for schooling, medical treatment, shopping, and social activities. The average value of travel distance for persons with disabilities is around 3,51 km. The longest average travel distance is 29,10 km for recreational trips for the physically disabled and the blind. Respondents with disabilities have the closest average travel distance, namely the purpose of medical treatment trips. At the same time, the closest average travel distance for blind respondents is the purpose of shopping trips. Meanwhile, deaf and speech-impaired respondents have the closest average travel distance, namely the distance of medical treatment trips. Respondents with intellectual disabilities have the closest average travel distance: shopping trip destinations. Intellectual disability respondents do not have a work trip destination because all respondents are students and non-students (not yet in school). Respondents with mental disabilities have the closest average travel distance for school trip purposes. The following is a comparison diagram of travel distances for people with disabilities.

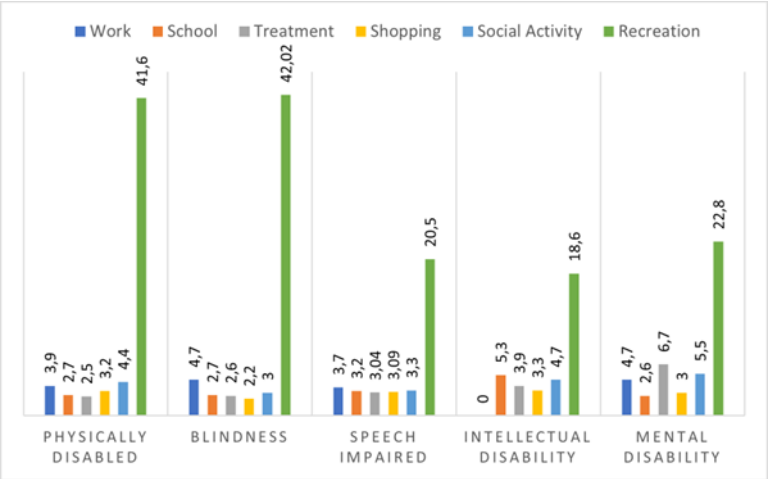

Figure 6. Comparison of Average Travelling Distance (km) of Respondents with Disabilities

g. Travel Time

The average travel time of respondents of the five types of persons with disabilities has similarities and differences in travel time for each trip purpose. The average travel time of respondents with disabilities is almost the same for shopping trips, which is 10 minutes. The longest average travel time is for recreational purposes, around 53 minutes. Respondents with disabilities have the fastest average travel time for shopping trip destinations. Blind respondents have the fastest average travel time for school trip purposes. Speech-impaired respondents had the fastest average journey time for school trip purposes. Intellectual disability respondents had the fastest average journey time for shopping trip purposes. Mental disability respondents had the fastest average journey time for school and shopping trip purposes. The following is a comparison diagram of the travel time of respondents with disabilities:

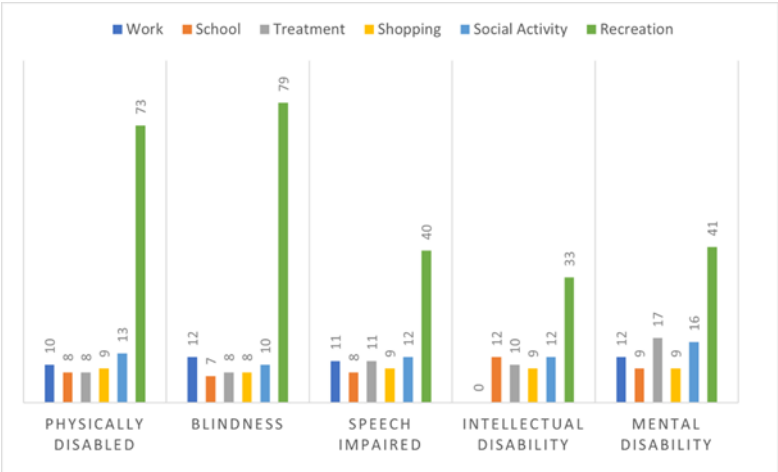

Figure 7. Comparison of Travelling Time (minutes) of Respondents with Disabilities

h. Transportation Cost

The average transport costs incurred by the five types of persons with disabilities was < Rp. 10,000. While the average transportation costs incurred by respondents of the five types of persons with disabilities is > Rp. 50,000 for recreational trips. The average transportation costs of respondents with disabilities and blind people have similarities in the purposes of movement to work, school, medical treatment, shopping, and social and recreational activities, with costs incurred of < Rp. 10,000, while for recreational travel purposes, it is > Rp. 50,000. Respondents with hearing impairments incurred the most transport costs other than recreational purposes, namely for shopping trips, Rp. 10,001.00 - Rp. 30,000.00. Respondents with intellectual disabilities incurred the most transport costs other than for recreational purposes, namely for school trips, namely Rp. 30,001.00 - Rp. 50,000.00. Respondents with mental disabilities incurred the most transportation costs other than for recreational purposes, namely for work trips, namely Rp. 10,001.00 - Rp. 30,000.00, while the least transportation costs were incurred for school trips, medical treatment, shopping, and social activities. The following is a comparison diagram of transportation costs for respondents with physical, hearing, and mental disabilities:

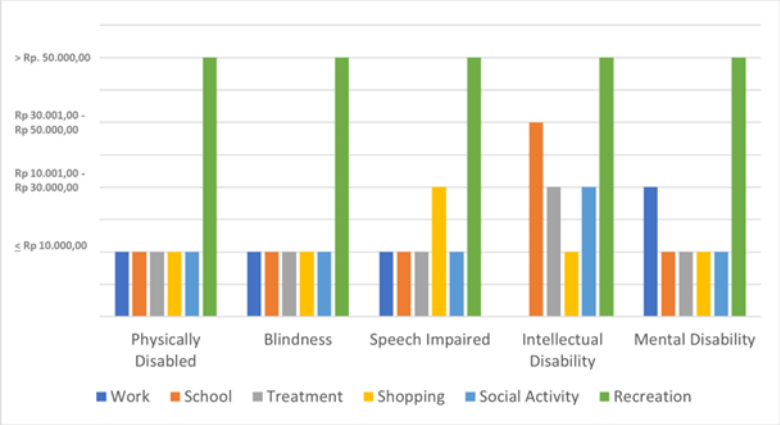

Figure 8. Comparison of Transport Costs of Respondents with Disabilities

2. Selection of Transportation Mode for Persons with Disabilities

a. Disabled

Based on the study results, regarding the selection of transportation modes for respondents with disabilities, many chose to use private vehicle modes, with a percentage of 54%. The least used mode chosen by respondents with disabilities to carry out travel purposes is four-wheeled private, public transportation, with a rate of 4%. Respondents with disabilities who carry out the purpose of movement to work, school, medical treatment, shopping, social activities, and recreation have a variety of modes. The modes often chosen for work travel are Trans Jogja, Difa Bike, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently

selected modes for school trips are Trans Jogja, Difa Bike, four-wheeled public transport, and private cars. Frequently chosen modes for medical trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Modes often chosen for shopping trips are Trans Jogja, Difa Bike, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for social activity trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Modes often chosen for recreational travel are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The following is a comparison of the selection of modes of transport for respondents with disabilities:

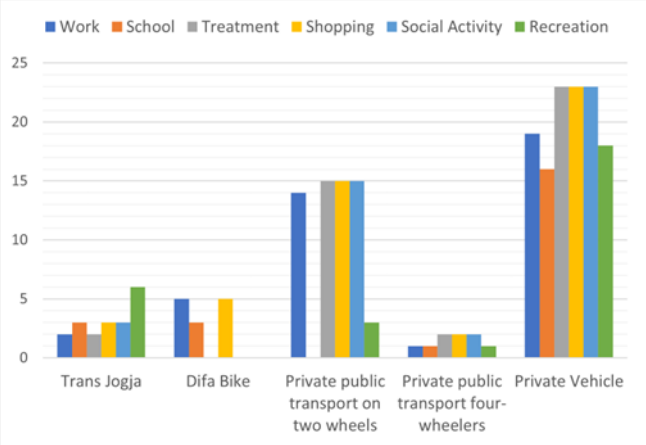

Figure 9. Comparison of Mode Selection Based on Travel Destination of Respondents with Disabilities

b. Visually Impaired

Based on the study results, the selection of transportation modes for blind respondents resulted from the fact that many chose to use two-wheeled private public transportation modes, with a percentage of 51%. The most miniature modes chosen by blind respondents for travel purposes are four-wheeled private, public transport, and Difa Bike, with a rate of 0%. The selection of transportation modes for blind people to carry out the purpose of movement to work, school, medical treatment, shopping, social activities, and recreation has a variety of modes. Modes often chosen for work travel are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The most frequently chosen modes for school trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private cars. Frequently chosen modes for medical trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The most commonly chosen modes for shopping trips are Trans Jogja,

two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for social activity trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Modes often chosen for recreational travel are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The following is a comparison of the selection of modes of transport for blind respondents:

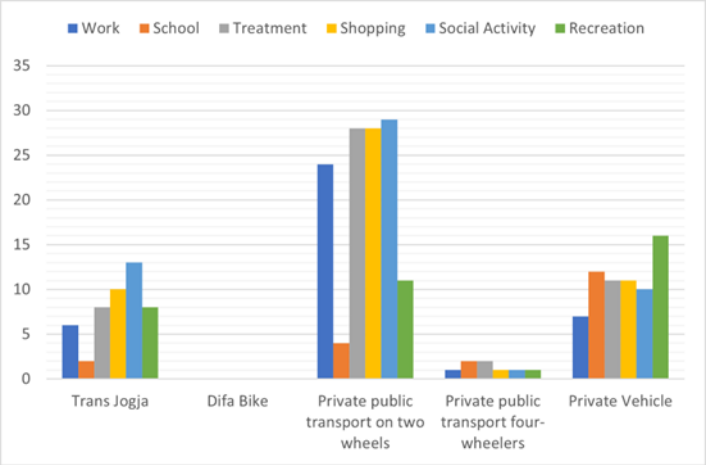

Figure 10. Comparison of Mode Selection Based on the Travel Destination of Visually Impaired Respondents

c. Speech Impaired

In selecting transportation modes for speech-deaf respondents, many chose to use private vehicles, with a percentage of 65%. The least used mode chosen by speech-deaf respondents for travel purposes is Difa Bike, with a rate of 0%. The selection of transportation modes for speech-deaf respondents to carry out the purpose of movement to work, school, medical treatment, shopping, social activities, and recreation has a variety of modes. Modes often chosen for work travel are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for school trips are two-wheeled private, public transport, four-wheeled private, public transport, and private cars. Often chosen modes for medical trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The most commonly chosen modes for shopping trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for social activity trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Modes often chosen for recreational purposes are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and

private vehicles. The following is a comparison of the selection of modes of transport for speech-deaf respondents:

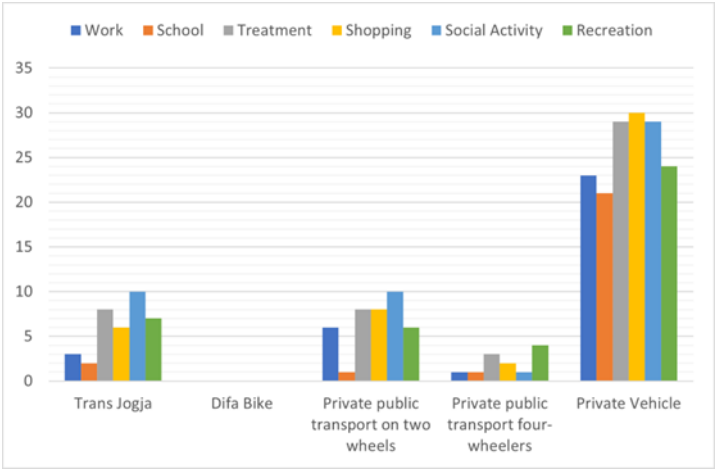

Figure 11. Comparison of Mode Selection of Deaf and Hard of Hearing Respondents

d. Intellectual Disability

Based on the study results, regarding the selection of transportation modes for respondents with intellectual disabilities, many chose to use private vehicles, with a percentage of 75%. At the same time, the most miniature mode was selected by intellectual disabilities to travel Difa Bike with a rate of 0%. The choice of transport mode for respondents with intellectual disabilities to carry out the purpose of movement to work, school, medical treatment, shopping, social activities, and recreation has a variety of modes. Modes often chosen for school trips are Trans Jogja, two-wheeled private, public transport, and private vehicles. The modes usually selected for medical treatment are Trans Jogja, four-wheeled private, public transport, and private cars. The most frequently chosen modes for shopping trips are Trans Jogja and private vehicles. Frequently selected modes for social activities are two-wheeled private, public transport, four-wheeled private, public transport, and private cars. Modes often chosen for recreational purposes are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The following is a comparison of the selection of modes of transport for respondents with intellectual disabilities:

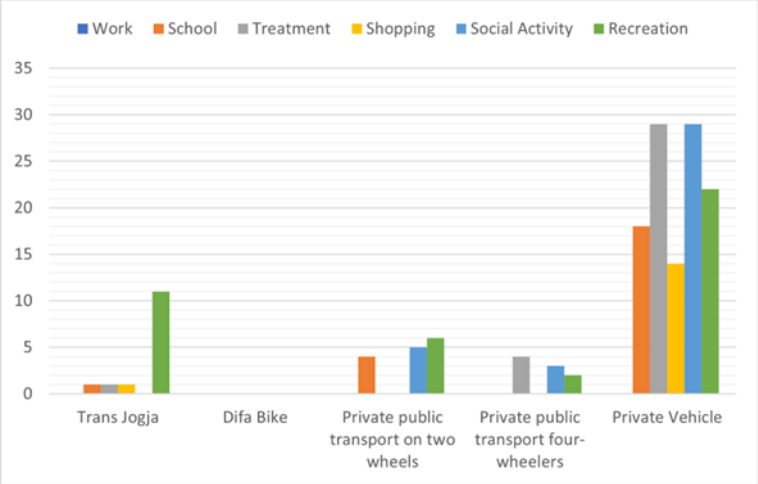

Figure 12. Comparison of Mode Selection Based on Travel Purpose of Respondents with Disabilities

e. Mental Disability

Based on the study results, the selection of transportation modes for respondents with mental disabilities chose to use private vehicles with a percentage of 70%. At the same time, the most miniature mode was selected by intellectual disabilities to travel Difa Bike with a rate of 0%. The choice of transportation mode for mental disabilities to carry out the purpose of movement to work, school, medical treatment, shopping, social activities, and recreation has a variety of modes. Modes often chosen for work travel are Trans Jogja two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for school trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private cars. The most commonly chosen modes for medical trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. The most frequently chosen modes for shopping trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Frequently selected modes for social activity trips are Trans Jogja, two-wheeled private, public transport, four-wheeled private, public transport, and private vehicles. Modes often chosen for recreational purposes are Trans Jogja, two-wheeled private, public transport, and private vehicles. The following is a comparison of the selection of modes of transport for respondents with mental disabilities:

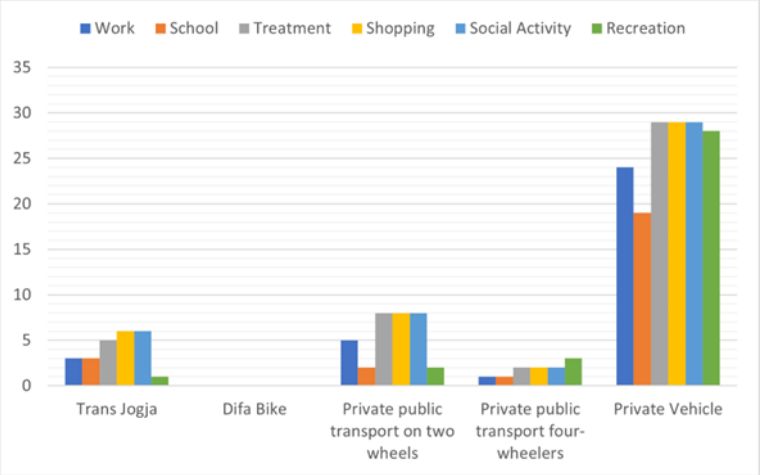

Figure 13. Comparison of Mode Selection of Mental Disability Respondents

B. Discussion

1. Factors Influencing Persons with Disabilities in Choosing Transportation Modes

a. Persons with Disabilities

People with disabilities who choose Trans Jogja mode are people with disabilities who tend to be older (26 - 45 years old), have lower income levels (<Rp 1,500,000.00), travel distances that tend to be closer, longer travel times, and cheaper transportation costs. People with disabilities who choose Difa Bike tend to be older (46 - 65 years old), travel more frequently, travel distances tend to be long, and travel time is longer. People with disabilities who choose two-wheeled private, public transportation are people with disabilities who tend to be older (46 - 65 years old), have lower income levels (< Rp. 1,500,000), have a role in the household as a mother, closer travel distances, travel times tend to be faster, and cheaper transportation costs. People with disabilities who choose four-wheeled private public transportation tend to be older (46 - 65 years old), have higher income levels, travel infrequently, and transportation costs are more expensive. People with disabilities who choose private vehicles are people with disabilities who tend to be older (26 - 45 years old), have higher income levels (IDR 1,500,000 - IDR 3,000,000), own private vehicles, travel more frequently with travel distances tending to be longer, faster travel times, and cheaper transportation costs. The following are the factors that influence the physically disabled towards mode selection:

Table 2. Factors Affecting the Selection of Transportation Mode for the Disabled

Variable	Trans Jogja	Difa Bike	Private Public Transportation Two-wheeled	Private Public Transportation Four-wheeled	Private Vehicle
Travel Destination	Not Affected	Affected	Not Affected	Affected	Affected
Travel Distance	Affected	Affected	Affected	Not Affected	Affected
Travel Time	Affected	Affected	Affected	Not Affected	Affected
Transportation Costs	Affected	Not Affected	Affected	Affected	Affected
Vehicle Ownership	Not Affected	Not Affected	Not Affected	Not Affected	Affected
Age	Affected	Affected	Affected	Affected	Affected
Income level	Affected	Not Affected	Affected	Affected	Affected
Role in Household	Not Affected	Not Affected	Affected	Not Affected	Not Affected

b. Visually Impaired

Visually impaired people who choose Trans Jogja are people with disabilities with lower income levels (<Rp 1,500,000), household roles as mothers and fathers, travel more frequently, travel distances tend to be close, travel time is longer, and transportation costs are cheaper. Visually impaired people who choose two-wheeled private, public transportation are people with disabilities with young ages (12 - 25 years), have lower income levels (< Rp.1,500,000), have private vehicles, roles in the household as mothers or fathers, travel more frequently, travel distances tend to be closer, travel time is faster, and transportation costs tend to be cheaper. Visually impaired people who choose four-wheeled private or public transportation are people with disabilities with younger ages (12 - 25 years), higher income levels (IDR 1,500,000 - IDR 3,000,000), have household roles as mothers, travel less frequently, and transportation costs are more expensive. Blind people who choose private vehicles are people with disabilities at young ages (26-45 years), own private vehicles, have higher income levels (IDR 1,500,000 - IDR 3,000,000), have a role as a father, do travel destinations more often, travel distances tend to be longer, faster travel times, and cheaper transportation costs. The following are the factors that influence the visually impaired toward mode selection:

Table 3. Factors Affecting the Selection of Transportation Modes for the Visually Impaired

Variable	Trans Jogja	Private Public Transportation Two-wheeled	Private Public Transportation Four-wheeled	Private Vehicle
Travel Destination	Affected	Affected	Affected	Affected
Travel Distance	Affected	Affected	Not Affected	Affected
Travel Time	Affected	Affected	Not Affected	Affected
Transportation Costs	Affected	Affected	Affected	Affected
Vehicle Ownership	Not Affected	Affected	Affected	Affected
Age	Not Affected	Affected	Affected	Affected
Income level	Affected	Affected	Affected	Affected
Role in Household	Affected	Affected	Affected	Affected

c. Speech Deaf

The speech impaired who choose Trans Jogja are people with disabilities who have a role as mothers, closer travel distance, longer travel time, and cheaper transportation costs. Deaf people who choose two-wheeled private public transportation are people with disabilities with older ages (46-65 years old), lower income levels (IDR 1,500,000 - IDR 3,000,000), more frequent travel destinations, longer travel distances, and cheaper transportation costs. Deafblind people who choose four-wheeled private, public transportation are people with disabilities with older ages (46 - 65 years), higher income levels (IDR 1,5000,000 - IDR 3,000,000), have a role in the household as a father, travel less frequently, and travel longer distances. Deaf people who choose private vehicles are people with disabilities with older ages (46 - 65 years), higher income levels, have a role in the household as a mother, own a private vehicle, travel more frequently, travel distances tend to be longer, travel time is faster, and transportation costs are cheaper. The following are the factors that influence the speech deaf toward mode selection:

Table 4. Factors Influencing the Selection of Transportation Modes for the Speech Deaf

Variable	Trans Jogja	Private Public Transportation Two-Wheel	Private Public Transportation Four-Wheel	Private Vehicle
Travel Destination	Not Affected	Affected	Affected	Affected
Travel Distance	Affected	Affected	Affected	Affected
Travel Time	Affected	Not Affected	Affected	Affected
Transportation Costs	Affected	Affected	Not Affected	Affected
Vehicle Ownership	Not Affected	Not Affected	Not Affected	Affected

Variable	Trans Jogja	Private Public Transportation Two-Wheel	Private Public Transportation Four-Wheel	Private Vehicle
Age	Not Affected	Affected	Affected	Affected
Income Level	Not Affected	Affected	Affected	Affected
Role in Household	Affected	Not Affected	Affected	Affected

d. Intellectual Disabilities

People with intellectual disabilities who choose Trans Jogja are those with younger age (< 11 years old), lower income level (IDR 1,500,000 - IDR 3,000,000), closer travel distance, longer travel time, and higher transportation costs. Intellectual disabilities who choose two-wheeled private or public transportation are people with disabilities who tend to be older (12 - 25 years old), have lower income levels (IDR 1,500,000 - IDR 3,000,000), have closer travel distances, have faster travel times, and have cheaper transportation costs. Intellectual disabilities who choose four-wheeled private or public transportation are people with disabilities who tend to be older (12 - 25 years old), have household roles as children, have longer travel distances, and have longer travel times. Intellectual disabilities who choose private vehicles are people with disabilities who own private cars, have higher income levels (IDR 4,500,000 - IDR 6,000,000), have household roles as children, have more frequent travel destinations, have longer travel distances, have faster travel times, and have cheaper transportation costs. The following are the factors that influence intellectual disabilities on mode selection:

Table 5. Factors Affecting the Selection of Transportation Modes for Intellectual Disabilities

Variable	Trans Jogja	Private Public Transportation Two-wheeled	Private Public Transportation Four-wheeled	Private Vehicle
Travel Destination	Not Affected	Not Affected	Affected	Affected
Travel Distance	Affected	Affected	Affected	Affected
Travel Time	Affected	Affected	Not Affected	Affected
Transportation Costs	Affected	Affected	Affected	Affected
Vehicle Ownership	Not Affected	Affected	Not Affected	Affected
Age	Affected	Affected	Affected	Not Affected
Income level	Affected	Affected	Not Affected	Affected
Role in Household	Not Affected	Not Affected	Affected	Affected

e. Mental Disability

People with mental disabilities who choose Trans Jogja are those who own a vehicle, travel less frequently, travel shorter distances, and travel longer. People with mental disabilities who choose two-wheeled private, public transportation are people with disabilities who tend to be young (26 - 45 years old), own a private vehicle, have a household role as a mother, travel less frequently, travel shorter distances, travel faster times, and cheaper transportation costs. People with mental disabilities who choose four-wheeled private public transportation modes are people with disabilities with higher income levels (IDR 3,000,000 - IDR 4,500,000), travel less frequently, travel longer distances, and have more expensive transportation costs. People with mental disabilities who choose private vehicles tend to be younger (26-45 years old), have private vehicles, travel more frequently, travel longer distances, have faster travel times, and have cheaper transportation costs. The following are the factors that influence intellectual disabilities on mode choice:

Table 6. Factors Affecting the Selection of Transportation Modes for Mental Disabilities

Variable	Trans Jogja	Private Public Transportation Two-wheeled	Private Public Transportation Four-wheeled	Private Vehicle
Travel Destination	Affected	Affected	Affected	Affected
Travel Distance	Affected	Affected	Affected	Affected
Travel Time	Affected	Affected	Not Affected	Affected
Transportation Cost	Not Affected	Affected	Affected	Affected
Vehicle Ownership	Affected	Affected	Not Affected	Affected
Age	Not Affected	Affected	Not Affected	Affected
Income Level	Not Affected	Not Affected	Affected	Not Affected
Role in the household	Not Affected	Affected	Not Affected	Not Affected

Conclusion

Of the five types of people with disabilities, most choose private vehicle modes for movement. The Trans Jogja mass public transportation mode is selected by all five types of persons with disabilities to carry out the purposes of movement for school, medical treatment, shopping, and recreation. The factors that influence the five persons with disabilities are different in choosing the mode of transportation. Still, similar factors equally influence persons with disabilities in selecting the mode. The five types of persons with disabilities have the same factors influencing the choice of Trans Jogja mode: travel distance

and travel time. Only people with disabilities choose the Difa Bike mode when carrying out travel purposes, with influential factors, namely the purpose of school and recreation trips, travel distance, travel time, transportation costs, and age. The five types of people with disabilities have the same factors that influence the choice of two-wheeled private and public transportation modes, namely travel distance, transportation costs, and age. In the four-wheeled private public transportation mode, no factors equally influence the five persons with disabilities. The five types of people with disabilities have the same factors that influence the choice of private vehicle modes, namely travel destination, travel distance, travel time, transportation costs, and vehicle ownership.

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