T A T A
L O K A

# Perceptions of Foreign Tourists towards Public Transportation Integration with Tourism Destination in the Special Region of Yogyakarta

Muhammad Najih Fasya[1]

**Abstract**: The development of tourism in the Special Region of Yogyakarta (DIY) is still experiencing problems, especially in the aspect of tourism transportation. The main problem is the absence of an adequate transportation management system in the tourism transportation system by integrating supply (tourism transportation) and demand (tourists). Previous studies have only partially explained the integration between modes of transportation and tourism, so there has been no integration between supply (tourism transportation) and demand (tourists) and it is not integrated holistically, especially foreign tourists as respondents. So, this study aims to analyze the effect of public transportation mode integration on the type of tourism and characteristics of foreign tourists. This study uses a quantitative research type using primary data collection techniques carried out by researchers through observation of tourist attractions, interviews with agencies and submitting questionnaires to foreign tourists. In addition, the secondary data source for this study comes from official government documents. The results of the study showed that most foreign tourist respondents in DIY were included in the Mid-centric psychographic characteristics of 92.52%. All respondents were Individual Mass Tourists. From the assessment of integration between public transportation modes in DIY at four DIY transportation nodes, it is also considered good. Although the average integration value reaches 95.31%. Then the results of the statistical test through ordinal regression analysis produced a figure of 22.47%, this percentage is the figure for the influence of public transportation integration on tourist attractions, because most foreign tourists prefer to use vehicle rentals.

*Keywords: Tourism Transportation, Integrated of Transportation Modes, Public Transportation, Types of Tourism, Foreign Tourists, Special Region of Yogyakarta*

## INTRODUCTION

Tourism transportation does not only deal with how tourists can get to tourist destinations, but in essence it is much more complex than just bringing tourists to their destination safely. The complexity of tourism can be seen from the tourism transportation system. Talking about systems means there is a relationship between subjects and objects, both humans and inanimate objects. The results of studies carried out over the last 5 years show that tourism transportation has several dimensions, starting from facilities (modes of transportation), infrastructure (terminals, stations, bus stops, etc.) to planning and management of transportation infrastructure management (Adisasmita & Caroles, 2021; Kranioti et al., 2022; Kuklina et al., 2022; Li et al., 2022; Nutsugbodo et al., 2018; Rachman et al., 2021; Rucci & Porto, 2022).

Other factors that can support the tourism transportation system are service performance factors and operational performance of transportation infrastructure (Nugroho et al., 2020; Nutsugbodo et al., 2018; Oloruntobi et al., 2023; Trianisari et al., 2014; Virkar & Mallya, 2018). But the most important aspect of tourism transportation is the tourism

[1] Urban and Regional Planning Programme Study, Faculty of Science and Technology, Universitas Amikom Yogyakarta, Yogyakarta, Indonesia

Correspondence: najih.fasya@amikom.ac.id

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transportation integration system as in the concept of *transit oriented development* but it does not specifically relate directly to the demand factor, namely tourists (Adisasmita & Caroles, 2021; Jian-jie et al., 2022; Kim et al., 2021; Kuklina et al., 2022; Li et al., 2022).

Implementation of integration between modes of transportation must pay attention to 4 aspects, namely organizational, operational, service, and physical aspects (Andriani & Herwening, 2021; Kusumawati, 2016; Listantari et al., 2022; Paramayudha & Handayeni, 2020). Organizational integration refers to governance and agreements between the various parties involved to achieve optimal goals and performance in the transportation system. Operational and service integration refers to the coordination and planning and alignment of public transportation systems to ensure smooth, comfortable, and safe travel for passengers (Arofah et al., 2012; Kusumawati, 2016; Listantari et al., 2022; Nugroho et al., 2020; Nutsugbodo et al., 2018; Trianisari et al., 2014; Virkar & Mallya, 2018). Meanwhile, physical integration is a physical change to transportation facilities so that passengers making transit can move smoothly, comfortably, and safely.

Meanwhile, the explanation regarding tourist preference factors in choosing the type of transportation mode to get to tourist attractions is explained separately by (Muljadi & Warman, 2016; Rucci & Porto, 2022; Suwena & Widyatmaja, 2017) However, there is still one more tourist demand factor that needs to be considered in the tourism transportation integration system, namely the tourist characteristics factor. Tourist characteristics are an identification of tourists in fulfilling tourists' needs and desires in traveling. Aspects of tourists according to (Gunn & Var, 2002; Smith, 1995) include demographics, geography, psychographics, and behavior. Demographics consist of elements of sex (gender), age group, professional or occupational group, and so on.

Gender and age group can influence selection patterns and preferences for the characteristics of tourist attractions to be selected (Seaton & Benner, 1996). This type of profession shows the socio-economic status of tourists and the size of their families which can influence tourists' purchasing power. Then geography is the place of origin of tourists, whether on a country, province, or city scale. Knowledge about tourist characteristics can function to predict travel behavior related to the selection of tourist attractions (Holloway, 2004; Keller & Kotler, 2009; March & Woodside, 2005). Tourist characteristics can be divided into psychographic factors and behavioral factors (Emrizal et al., 2015; Plog, 1974; Swaarbrooke & Horner, 1999; Zanuar, 2017).

The development of tourism in the Special Region of Yogyakarta (DIY) is still experiencing problems, especially in the aspect of tourism transportation. The main problem is the absence of an adequate transportation management system in the tourism transportation system by integrating supply (tourism transportation) and demand (tourists). Based on the results of the primary survey by the researcher team in February 2023, the type of transportation that is popular among foreign tourists when traveling in the City of Yogyakarta is walking at 39.13%, then 21.73% use rental vehicles, then 21.73% choose to use online transportation, 13.04% use private vehicles and only 4.34% use public transportation. The DIY Government has planned for travel restrictions during the Covid-19 pandemic, but the DIY Government has also issued a policy in the form of implementing a PPnBm tax of 0% on motor vehicle purchases, this has had an impact on sales in the automotive industry sector which increased by 64% (Dinas Perhubungan Daerah Istimewa Yogyakarta, 2022). Chairman of the Advocacy and Community Division of the Indonesian Transportation Society (MTI), Djoko Setijowarno, said that people's habituation in using public transportation in Yogyakarta is an example for travelers or tourists. The hope is that public transportation will operate more optimally (Amin, 2023). Although according to data from the DIY Transportation Service, the trend in the number of Trans Jogja passengers in the last two years (2021 and 2022) continues to increase.

Apart from that, Djoko Setijowarno called on the DIY Government to map every tourism destination, including accommodation facilities. So that tourists can connect with the tourist attractions of their respective destinations. Darmaningtyas (Transportation Observer from the Institute of Transportation Studies) added that the DIY Transportation Service must immediately organize the integration of public transportation in DIY. Darmaningtyas gave the example of Tugu Station and Lempuyangan Station which are not directly connected to public transportation, so tourists prefer to rent a car or motorbike to get to accommodation or tourist attractions. Apart from that, the distance from the station to the Trans Jogja bus stop is also quite far, so the most rational choice is to use an online taxi or rent a vehicle around the station.

The complexity of transportation and tourism based on supply and demand underlies this research with the aim of analyzing the influence of the integration of public transportation modes on types of tourism and the characteristics of foreign tourists. Because it is very unfortunate that previous studies still partially explain the integration between modes of transportation and tourism, so there is no integration between supply (tourism transportation) and demand (tourists) and is not integrated holistically but specifically, especially foreign tourists as a respondent. So, the focus of this research is focused on integration between modes, types of tourism, and characteristics of foreign tourists. Practical interest for the DIY Government, it is hoped that it will provide research benefits in preparing integration studies between tourism transportation modes. A policy that is right on target and applicable is a priority in tourism planning and development (Coppola et al., 2020; Wendt et al., 2021).

This research aims to examine how much influence the integration of public transportation modes has on the type of tourism and characteristics of foreign tourists in tourism development in DIY. To fulfill this research goal, there are two objectives: identifying factors in the integration of public transportation modes and identifying types of tourism and characteristics of foreign tourists in DIY.
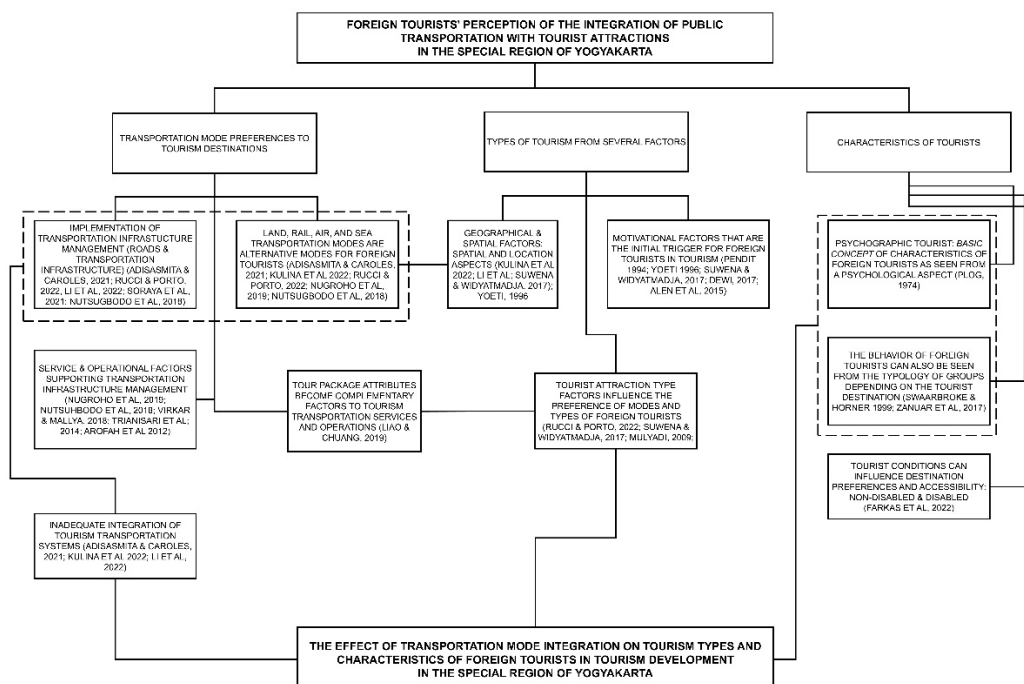


**Figure 1. Literature Mapping**

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## METHOD

### Research Type and Scope

This research uses a quantitative type of research, which is oriented to empirical facts so that it can be trusted by reason by emphasizing rationality (Kasiram, 2008). The scope of the material discussed in this research is identifying factors in the integration of public transportation modes in DIY, identifying types of tourism and the characteristics of foreign tourists and testing the influence of the integration of public transportation modes on the type of tourism and characteristics of tourists abroad in the DIY. The identification process was carried out using primary and secondary data collection techniques. Primary data collection through observation, questionnaires, and interviews. Meanwhile, secondary data collection from relevant policy and development documents.
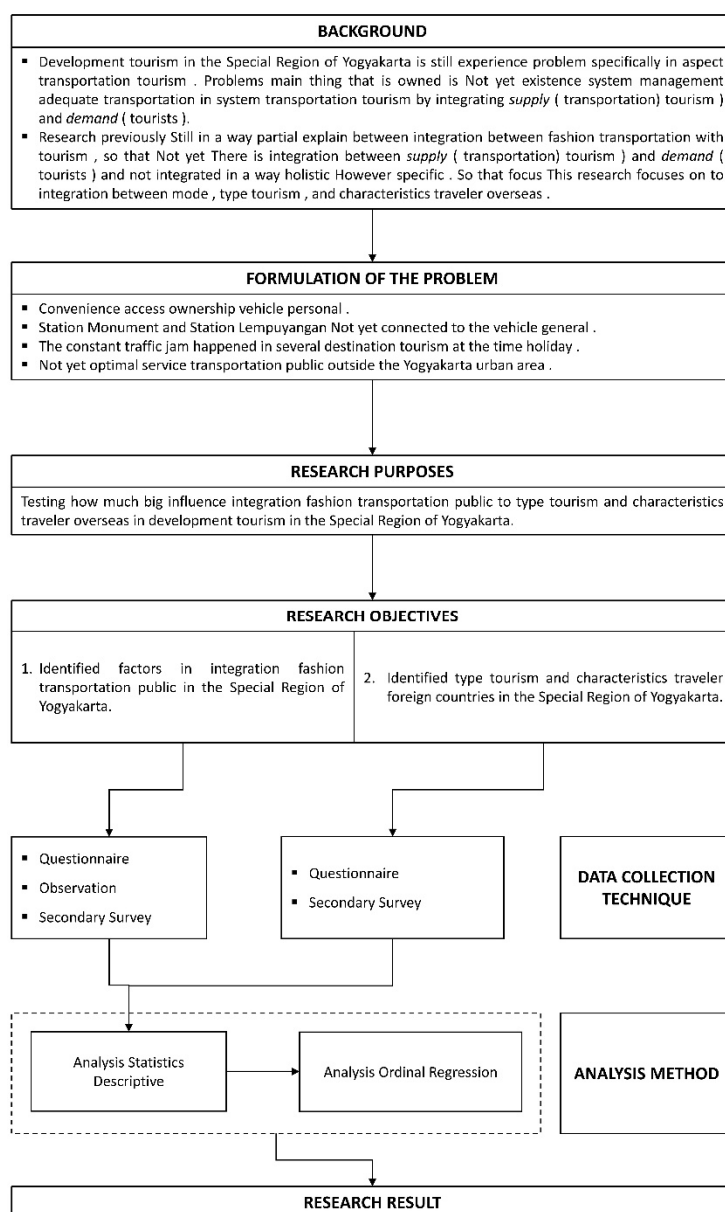


**BACKGROUND**

- Development tourism in the Special Region of Yogyakarta is still experience problem specifically in aspect transportation tourism . Problems main thing that is owned is Not yet existence system management adequate transportation in system transportation tourism by integrating *supply* ( transportation) tourism ) and *demand* ( tourists ).
- Research previously Still in a way partial explain between integration between fashion transportation with tourism , so that Not yet There is integration between *supply* ( transportation) tourism ) and *demand* ( tourists ) and not integrated in a way holistic However specific . So that focus This research focuses on to integration between mode , type tourism , and characteristics traveler overseas .

**FORMULATION OF THE PROBLEM**

- Convenience access ownership vehicle personal .
- Station Monument and Station Lempuyangan Not yet connected to the vehicle general .
- The constant traffic jam happened in several destination tourism at the time holiday .
- Not yet optimal service transportation public outside the Yogyakarta urban area .

**RESEARCH PURPOSES**

Testing how much big influence integration fashion transportation public to type tourism and characteristics traveler overseas in development tourism in the Special Region of Yogyakarta.

**RESEARCH OBJECTIVES**

1. Identified factors in integration fashion transportation public in the Special Region of Yogyakarta.

2. Identified type tourism and characteristics traveler foreign countries in the Special Region of Yogyakarta.

- Questionnaire
- Observation
- Secondary Survey

- Questionnaire
- Secondary Survey

**DATA COLLECTION TECHNIQUE**

Analysis Statistics Descriptive → Analysis Ordinal Regression     **ANALYSIS METHOD**

**RESEARCH RESULT**

**Figure 2. Research Flowchart**

The regional scope of this research is DIY, there are four regencies and one city, namely Kulon Progo Regency, Bantul Regency, Gunung Kidul Regency, Sleman Regency and Yogyakarta City (Badan Pusat Statistik Daerah Istimewa Yogyakarta, 2023). So that primary and secondary data collection is within the administrative boundaries of DIY Province. Including distributing questionnaires to foreign tourists only to foreign tourists in DIY and not looking at tourist destinations that foreign tourists have visited or will visit outside DIY.

## Data Collection Techniques and Instruments

Primary data collection techniques in this research were carried out by researchers through observation, interviews with local government organizations and submitting questionnaires to respondents. The questionnaire respondents in this research were foreign tourists in DIY. The number of respondents to the research questionnaire was determined through a purposive sampling technique, using the Isaac & Michael method. The Isaac & Michael method was chosen because the population is known (Sugiyono, 2020). The population in this study uses data on the number of foreign tourists in DIY as of March 2023. This data was obtained from DIY Government Tourism Office with the number of foreign tourist arrivals in March amounting to 5,017 foreign tourists, resulting in a sample of at least 95 respondents from foreign tourists.

Furthermore, for observation, the objects observed in this research are operational, service, and physical aspects of the integration aspects between public transportation modes. Not only primary data, this research also collected secondary data. Secondary data collection techniques come from data obtained indirectly, which can be through other people or documents (Sugiyono, 2020). Secondary data sources can be personal records or official government documents. Secondary data was obtained, among others, from the central statistics agency, the transportation service, and the tourism service from DIY Government Offices.

## Data Analysis

1. Statistics Descriptive analysis

This analysis describes actual conditions or events and is simply describing facts. Presentation of descriptive statistics uses tables and diagrams to show the findings from the data to be. The data analyzed using this analysis technique comes from variable parameters of intermodal integration, type of tourism and characteristics of tourists in DIY. This analysis technique is used to achieve research objectives:

1. Identified factors in the integration of public transportation modes in DIY.
2. Identification of types of tourism and characteristics of foreign tourists in DIY.

2. Ordinal regression analysis

This analysis used to model the relationship between the dependent (bound) variable on an ordinal scale, namely the perception of foreign tourists regarding the importance of intermodal integration towards tourism destinations in DIY, with the independent variables, namely the type of tourism visited by foreign tourists and characteristics of foreign tourists in DIY. This ordinal regression analysis technique was used to achieve the research goal: "To test the influence of the integration of public transportation modes on the type of tourism and characteristics of foreign tourists in DIY." This analysis will also produce a percentage level of influence from the results of statistical tests with SPSS software. So, to find out this, an ordinal regression analysis was carried out with the division of variables as follows:

a. The perception of foreign tourists regarding the integration of public transportation with tourist attractions in DIY is the dependent variable (Y).

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b. The types of tourism studied include types of tourism based on the tourist attraction factor (X1).
c. The characteristics of foreign tourists studied include tourist characteristics based on psychographic factors (X2).
d. The characteristics of foreign tourists studied include tourist characteristics based on behavioral factors (X3).

The following are the steps for carrying out ordinal regression analysis:

1. Collecting data
   The first step is to collect data that will be used in the analysis. The data collected must include one dependent variable that is on an ordinal scale and one or more independent variables.
2. Categorizing variables
   The variables collected must then be categorized based on data type and scale. Identify the ordinal dependent variable and the independent variables that will be included in the model.
3. Analyzing data
   The data is then analyzed using the ordinal regression method through SPSS software to analyze the relationship between the dependent variable and the independent variable. From this analyzing data, they were two result tables: Pseudo R-Square and Partial Test (Parameter Estimates). These two statistics results were very important to obtain research goal.
4. Interpretation of results
   The results of the ordinal regression analysis must then be interpreted to determine the effect of the dependent variable (Y) on the dependent variable (X1, X2, X3). At the final stage of SPSS, the results of the ordinal regression modeling and the model for predicting the first observation data in the data view attribute will be known.

## Research Variables

**Table 1. Research Variables**

| Objectives | Variables | Indicators | Parameters |
|---|---|---|---|
| 1. Identification of factors in the integration of public transportation modes in the Special Region of Yogyakarta. | Organization | Regulation & Arrangement | The existence of regulations and arrangements |
| | | | Implementation of regulations and arrangements |
| | | Coordination and cooperation between stakeholders | There is coordination and cooperation between stakeholders |
| | | Funding | The existence of funding |
| | Operational | Network (Road and Rail) | Connected with transportation modes |
| | | | Connected with park and ride |
| | | | Connected to all *nodes* |
| | | Route | Availability of route information |
| | | Timetable | Availability of schedule information |
| | | | Punctuality of arrival schedule |
| | | | Punctuality of departure schedule |
| | | Signage | Signage available |
| | | | Availability of tariff information |
| | | Waiting time | Average waiting time |
| | | Time travel | Average travel time |
| | Service | Security | Availability of CCTV |
| | | | Availability of crossing facilities (Zebra Crossing/ *JPO*) |
| | | | Availability of lighting |

| Objectives | Variables | Indicators | Parameters |
|---|---|---|---|
| | | Comfort | Private vehicle parking is available |
| | | Connectivity | Availability of pedestrian paths from and/or to nodal points & modes of transportation |
| | | Non-route mode | Availability of non-route onward transportation (taxis/motorcycle taxis/rickshaws/vehicle rentals) |
| | Physique | Accessibility of Node Points | Strategic location |
| 2. Identification of types of tourism and characteristics of foreign tourists in the Special Region of Yogyakarta. | Types of Tourism from Geographical and Spatial Factors | Local Tourism | City/district scale |
| | | Regional Tourism | Provincial scale |
| | | National Tourism | National scale |
| | | Regional-International Tourism | Regional-international scale (still on one continent) |
| | | International Tourism | International scale (all countries) |
| | Types of Tourism from Tourist Attraction Object Factors (X1) | Natural Attractions | Nature-based and natural |
| | | Artificial Attractions | Man-made based |
| | | Cultural Attractions | Culture-based (tangible) |
| | | Special Interest Attractions | Oriented towards special experiences for tourists |
| | Characteristics of Foreign Tourists from Psychographic Factors (X2) | Allocentric | Do not use travel agent services, arrange your own trip, visit tourist attractions that you have not visited known |
| | | Psychocentric | Using a travel agent, not traveling alone, visiting popular tourist attractions |
| | | Mid-centric | Use a travel agent or plan it yourself , visit a place that is not crowded. |
| | Characteristics of Foreign Tourists from Behavioral Factors (X3) | Organize Mass Tourist | Using a travel agent, visiting popular tourist attractions, traveling in a group, always guided by a tour guide |
| | | Individual Mass Tourist | using travel agents completely, traveling alone or with a small number of people, visiting popular tourist attractions |
| | | Explorer | Organizing your own trip, still want to use a travel agent, don't have a definite travel plan |
| | | Drifters | Organize your own trip, don't want to use a travel agent, don't plan your itinerary |
| | Perceptions of foreign tourist respondents regarding the importance of integrating public transportation with tourist attractions (Y) | | |

**Research purpose:**
Testing the influence of the integration of public transportation modes on the types of tourism and characteristics of foreign tourists in the Special Region of Yogyakarta.

## RESULT AND DISCUSSION

### Analysis of Integration between Public Transportation Modes

The assessment of integration between public transportation modes in this research uses four aspects, namely organizational, operational, service and physical aspects (Andriani & Herwening, 2021; Kusumawati, 2016; Listantari et al., 2022; Paramayudha & Handayeni, 2020). The organizational aspect consists of regulations and arrangements, coordination and cooperation between stakeholders, and funding. Operational aspects consist of networks, routes, schedules, signage, fare information, waiting times and travel times. Then the service aspect consists of security, comfort, connectivity and non-route modes. Meanwhile, the physical aspect is assessed from the accessibility of node points. The transportation node integration assessment was assessed based on a primary survey through observations and

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interviews. Apart from that, to complete the primary survey, a secondary survey was also carried out based on articles, regulations and mainstream social media. Based on the results of the assessment of integration between public transportation modes from 4 aspects, 15 indicators and 22 parameters, it is indicated that none of the four transportation nodes in DIY, namely Yogyakarta Station, Adisutjipto Airport, YIA Airport and Gamping Park and Ride, meets the assessment standards 100%. It was found that the average integration value for transportation nodes in DIY was 95.31%. The following is an explanation of each transportation node.

1. The first is Yogyakarta Station which does not meet operational aspects with waiting time indicators. Because waiting time can be seen from the headway. Headway is the time between two modes of public transportation to pass through a transportation/transit node. The ideal headway for commuter line trains is 5-10 minutes. Meanwhile, based on information from PT. KAI hedaway Commuter Line Yogyakarta and Prameks are 59 minutes and 189 minutes. Even though the time schedule is correct for arrivals and departures, the headway is still far below standard. So in the category of schedule accuracy it does not meet. Yogyakarta Station has an integration value of 96.88%.

2. The second is Adisutjipto Airport which does not meet operational aspects with schedule indicators - parameters for the accuracy of arrival and departure schedules and waiting time indicators. Based on reviews of commuter line train passengers from Google reviews and YouTube sites, the departure schedule and arrival schedule are on time. This is supported by research (Paradhiba, 2023) where the punctuality of departure and arrival times is according to schedule. So that the accuracy of departure and arrival schedules meets standards. Furthermore, based on the results of the operational schedule survey from the DIY Transportation Agency in 2022, it was found that only 41% of passenger respondents assessed that Trans Jogja was on time. Because the BRT punctuality parameters do not match, the schedule punctuality category does not meet.

   The headway at Adisutjipto Airport can be seen through the waiting time for the Commuter Line mode at Maguwo Station and the Adisutjipto Airport Bus Stop. Similar to the headway from Yogyakarta Station, the headway for the Yogyakarta - Solo commuter line which transits at Maguwo Station is also far below standard because it is > 10 minutes. For BRT headway it is < 30 minutes (Peraturan Menteri Perhubungan Nomor 98 Tahun 2013 Tentang Standar Pelayanan Minimal Angkutan Orang Dengan Kendaraan Bermotor Umum Dalam Trayek, 2013), where the airport bus stop serves BRT Trans Jogja with Routes 1A, 1B, 3A, and 5B. Based on operational performance results from the DIY Transportation Agency for headway in 2022, Routes 1A, 1B, and 3A have a headway of <30 minutes. Meanwhile, Route 5B has a headway of > 50 minutes. So in the category of schedule accuracy it also does not meet. Adisutjipto Airport has an integration value of 93.75%.

3. Third is YIA Airport which does not meet the service aspect with security indicators - parameters for the availability of crossing facilities. However, the need for crossing facilities for YIA Airport and Gamping Park and Ride is not necessary because they are on national roads and do not require pedestrian paths. YIA Airport has an integration value of 96.88%.

4. Fourth is Park and Ride Gamping which does not meet the service aspect with safety indicators - the parameters for the availability of crossing facilities. However, the need for crossing facilities for Park and Ride Gamping is also not needed because it is on a national road and does not require a pedestrian path. *Park and Ride* Gamping has an integration value of 93.75%.

## Analysis of Tourism Types and Characteristics of Foreign Tourists

### Types of Tourism

DIY tourism based on tourist attraction factors can be categorized into natural tourist attractions, artificial tourist attractions, cultural tourist attractions and special interest tourist attractions. Based on the DIY Government Tourism Office, the Special Region of Yogyakarta has 313 tourist attractions consist of 157 natural attractions, 83 artificial/human made attractions, 70 cultural attractions and 3 special interest attraction. But there are also tourist destination areas that have a mix of types of tourist attractions, such as tourist villages which have natural and cultural tourist attractions. According to data in 2022, the largest number of visitors is Parangritis Beach in Bantul Regency with 2,363,900 visitors.

Parangritis Beach
(Natural Tourist Attraction)

Breksi Cliffs
(Artificial Tourist Attraction)

Prambanan temple
(Cultural Tourist Attraction)

Merapi Volcano Tour
(Special Interest Tourist Attraction)

**Figure 3. Several Types of Tourist Attractions in DIY**

Based on primary surveys and secondary surveys, of the four types of tourist attractions with the highest number of visits in DIY, only Prambanan Temple is integrated with public transportation, namely Trans Jogja Bus Route 1A (Adisutjipto – Malioboro via Prambanan) which drops off at Prambanan Terminal and KRL Y01 ( Yogyakarta – Solo) get off at Brambanan Station. After getting off at Prambanan Terminal, visitors can continue their journey using a pedicab or carriage to get to Prambanan Temple. However, the distance from Prambanan Terminal and Prambanan Station to Prambanan Temple, if reached on foot, takes 20 minutes with a distance of 1.2 km. Apart from that, if you walk from Prambanan Terminal to Prambanan Temple you have to pass Jl. Prambanan Market (± 108 m) and Jl. Raya Solo – Yogyakarta (± 1 km), then only Jl. Raya Solo - Yogyakarta which has a pedestrian path. Meanwhile, if you want to walk from Brambanan Station to Prambanan Temple, you have to pass Jl. Brambanan Station (± 500 m), and Jl. Raya Solo (± 700 m).

These conditions will make it difficult for tourists who want to visit Prambanan Temple if they use public transportation, especially since Prambanan Temple's operational hours are from 06.30 – 17.00 with conditions that are scorching hot from the sun if tourists visit during

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the afternoon and evening. Apart from that, Jl. Prambanan Market and Jl. Brambanan Station also does not have a pedestrian path or pedestrian path. So it is not only constrained by distance and weather conditions, but also the condition of road infrastructure facilities which do not have pedestrian paths. Meanwhile, other tourist attractions that are not integrated with public transportation must use private or rental vehicles. Therefore, tourists will tend to choose private vehicles, rental vehicles or use online transportation to get to these tourist attractions. Because public transportation (especially BRT) in DIY is concentrated in the central urban area of Yogyakarta City and has not reached evenly throughout all regencies/cities in DIY.

### Characteristics of Foreign Tourists

The characteristics of foreign tourists in this study looked at four aspects, namely sociodemographics, geography, psychography and behavior. The respondents in this study were 107 foreign tourists in DIY. Sampling was spread across several tourist attractions most visited by foreign tourists, namely Prambanan Temple, Tamansari, Keraton, Sonobudoyo Museum and the Malioboro area. Distribution of questionnaires to foreign tourists is only for foreign tourists in DIY and does not look at the tourist destinations that foreign tourists have visited or will visit outside DIY. So the classification of foreign tourists, especially to fulfill objectives 1 and 2 regarding psychographic characteristics and behavioral characteristics, only applies through the identification of foreign tourists who visit tourist attractions in DIY.

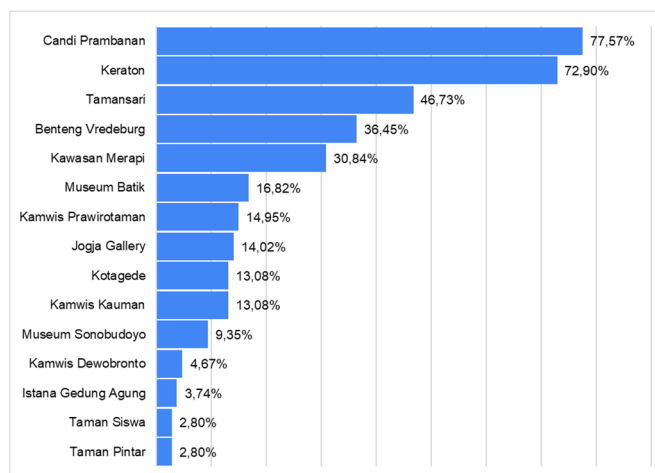    A. Psychographic Characteristics
        1. Tourist Attractions Visited



**Figure 4. Percentage of Tourist Attractions Visited by Respondents Foreign Tourists**

Based on survey results, Prambanan Temple is the most visited tourist attraction with a percentage reaching 77.57%. The second position is occupied by the Yogyakarta Palace with a percentage reaching 72.90%. Other tourist attractions are in the city of Yogyakarta, both cultural tourist attractions and artificial tourist attractions . The survey results are relevant when compared with the distribution of the number of foreign tourist visits based on tourist attractions which is visualized in Figure 11, where the concentration of foreign tourists is in Yogyakarta City and Prambanan Temple only. This is different from the distribution of the number of domestic tourist visits in Figure 10 which is relatively well spread across Yogyakarta City, Prambanan Temple, the Merapi area in the North and the South Coast area. So

on average, the percentage of visits to the 15 tourist attractions in Figure 3 is 23.99%. Therefore, tourist attractions that have a visit percentage below 23.99% tend not to be visited by many foreign tourists.
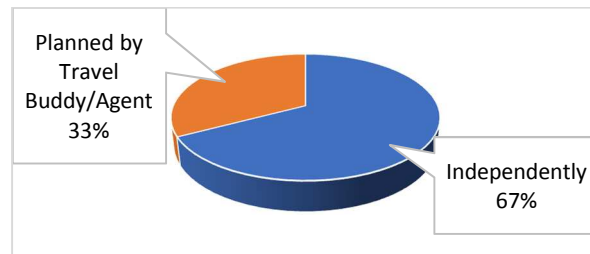
2. Travel plans



**Figure 5. Percentage of Respondents' Travel Plans Foreign Tourists**

Based on travel plans, there are 67% of foreign tourist respondents who plan trips and tours independently. Meanwhile, 33% of other foreign tourist respondents plan trips and tours with the help of a travel buddy/travel agent. Even though 82% of foreign tourist respondents are *first timers,* many still choose to plan their trips independently.

3. Resources
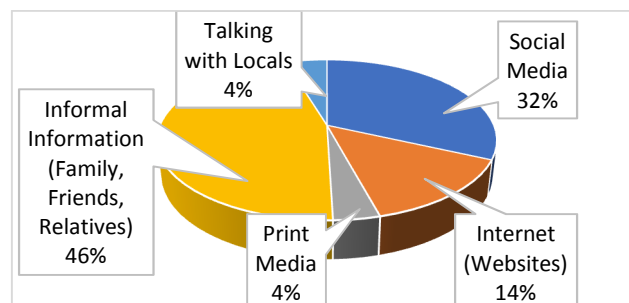


**Figure 6. Percentage of Respondents' Use of Information Sources**

Information openness and accessibility of diverse information makes it easier for foreign tourists to plan trips and tours in DIY. There are 46% of foreign tourist respondents who know about tourism in DIY from family, relatives, friends and colleagues. Meanwhile, 32% of other foreign tourist respondents found out about it from social media via Instagram, YouTube, Facebook, and Twitter. Furthermore, there are 14% of foreign tourists who use sites on the internet, and 4% of other foreign tourist respondents found out about it from printed media such as brochures, pamphlets and advice from Indonesians (for students).

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From the primary survey result above, psychographic characteristics were divided to:
   a. *Allocentric*

This type of tourist visits unknown places. This type of tourist has an adventurous nature, travels alone, is highly curious, likes to organize his own trips and takes advantage of the facilities provided by the local community. The results of the primary survey show that there are no tourists of this type out of the total number of foreign tourist respondents, namely 107 respondents. Because even though the majority of tourists arrange their own trips (72% of foreign tourist respondents), no one visits tourist attractions outside the 313 list of tourist attractions issued by the DIY Tourism Office). So the percentage of tourists in this classification is 0%.

   b. *Psychocentric*

This type of tourist visits tourist attractions with adequate facilities and standards. Apart from that, they travel with clear and definite tour packages or programs, have relatively low curiosity, tend to travel in large groups, and only visit tourist attractions that are already popular/crowded. Based on the survey results, the category of foreign tourists included are tourists who plan their trip through *a travel buddy/agent* and do not travel alone (with family or friends) and do not visit tourist attractions that have below average foreign tourist visits. So it was obtained that there were 8 foreign tourist respondents who fell into the *psychocentric category,* or had a percentage of 7.48%.

   c. *Mid-centric*

This type of tourist is in the middle of *allocentric* and *psychocentric*, where they are not the type who like adventure but can also accept new types of tourist attractions, even though these tourist attractions are not yet well known and busy. This category of tourists can travel alone or with friends or family, visiting tourist attractions that are already busy but also want to visit tourist attractions that are not yet too busy. Apart from that, tourists can also plan trips independently or with a travel buddy/agent. The basic difference from *psychocentric tourists is that mid-centric* tourists visit tourist attractions that are already busy and those that are not yet busy. So there are no *mid-centric tourists* who only visit busy and popular tourist attractions. So there are 99 respondents who fall into the *mid-centric category* or 92.52%.

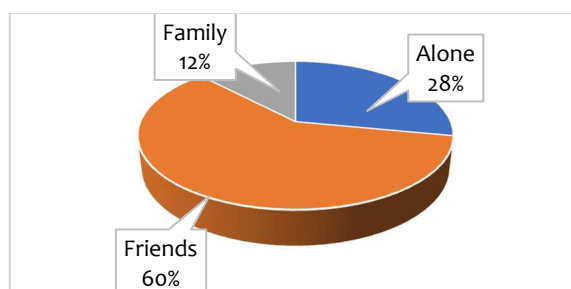   B. Behavioral Characteristics
      1. Travel Companion



**Figure 7. Percentage of Respondents' Travel Partners**

If we look at fellow travelers, the majority of foreign tourist respondents travel with friends with a percentage reaching 60%. The second position is foreign tourist respondents who travel alone or *solo travelers* with a percentage reaching 28%. Meanwhile, in third position are foreign tourist respondents who travel with their

families with a percentage of 12%. Meanwhile, foreign tourists who travel with their families have various age categories, there are young families with children aged 5-10 years, but there are also families who travel with children who are over 17 years old. Apart from that, there are no foreign tourists who bring large families, the average is only 4-5 family members (father, mother, and children).
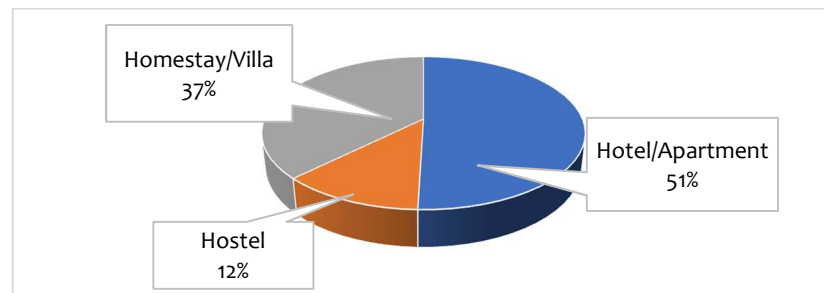
2.  Type of Accommodation



**Figure 8. Percentage of Accommodation Type Foreign Tourists in DIY**

The type of accommodation most frequently used by foreign tourist respondents is hotel/apartment with a percentage of 51%. Then the next most used type of accommodation is homestay/villa with a percentage of 37%. Meanwhile, the lowest percentage is the hostel accommodation type with a percentage of 12%.
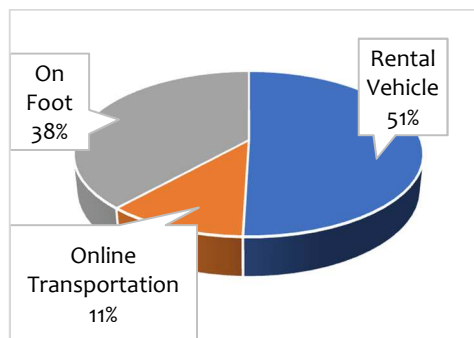
3.  Modes of transportation used while in DIY



**Figure 9. Percentage of Transportation Modes Used
Respondents from Foreign Tourists while in DIY**

Based on the mode of transportation used by foreign tourist respondents while in DIY, vehicle rental is the favorite with a percentage reaching 51%. Vehicle rental includes renting your own motorbike, renting a car with *a* driver from a car rental, and car + driver from a tour package by *a travel agent.* Next in second place are foreign tourist respondents who walk with a percentage reaching 38%, the majority of activities in DIY are walking, especially in the city center of Yogyakarta (zero point area). Meanwhile, in third position are foreign tourist respondents who choose online transportation such as Grab with a percentage of 11%.

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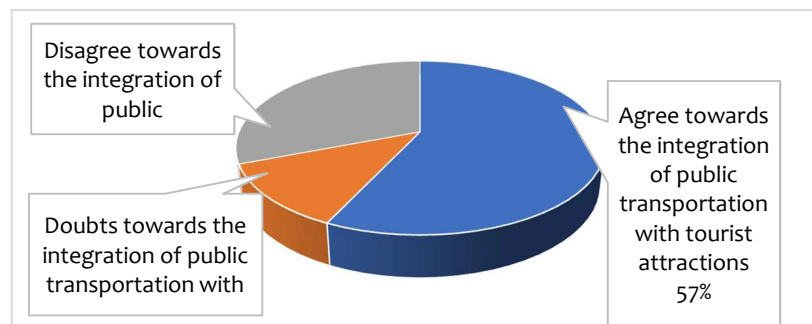C. The Importance of Integrating Public Transportation with Tourist Attractions



**Figure 10. Percentage of Perceptions of Foreign Tourist Respondents Regarding the Importance of Integrating Public Transportation with Tourist Attraction Objects**

Based on the perceptions of foreign tourist respondents regarding the importance of integrating public transportation with tourist attractions, there are 57% of foreign tourist respondents who agree that public transportation is integrated with tourist attractions in DIY. 57% of foreign tourist respondents consisted of foreign tourists who traveled alone or with friends. Meanwhile, respondents from foreign tourists who travel with their families and a small number of respondents from foreign tourists who travel with friends tend to disagree that public transportation is integrated with tourist attractions in DIY, because it is more convenient to rent a vehicle to travel. Meanwhile, 12% of foreign tourist respondents were doubtful about the integration of public transportation with tourist attractions in DIY, and 12% of foreign tourist respondents traveled with friends.

Apart from that, based on age groups and behavioral characteristics, foreign tourists in DIY have the opportunity to become the target market for the integration of public transportation in DIY. However, based on the number of visits by domestic tourists and foreign tourists who are the demand for tourism transportation, transportation integration should be focused on destinations that have high demand by looking at the number of tourist visits. For example, because foreign tourists tend to like cultural tourist attractions such as Prambanan Temple, the integration of public transportation to Prambanan Temple needs to be improved. The historical and cultural tourist attraction is the main magnet for foreign tourists visiting the Special Region of Yogyakarta. According to researchers, foreign tourists tend to avoid artificial tourism that does not contain historical and cultural elements, such as Breksi Cliff, and natural tourism that is too busy and heavily visited by domestic tourists, such as Parangtritis Beach.

From the primary survey result above, behavioral characteristics were divided to:

1. *Organize Mass Tourists*

   This type of tourist buys holiday packages from travel agents by visiting popular tourist attractions and relatively does not like anything challenging. Apart from that, this type of tourist usually travels in large numbers by taking part in every activity that is scheduled in the itinerary. In general, tourists are always guided by a tour guide during their journey. In terms of facilities, they tend to choose tourism facilities that are adequate and comfortable. Based on the survey results, there is no category of foreign tourists who vacation in large numbers. So the percentage of tourists in this classification is 0%.
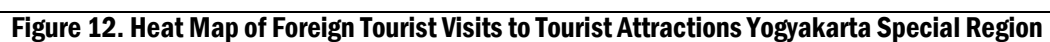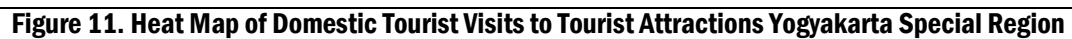
2. *Individual Mass Tourists*

    This type of tourist chooses to vacation independently or with a small number of people (could be close friends or a small family). Apart from that, this type of tourist also visits tourist attractions that are already popular and busy, but still has the freedom to travel (not fully using a travel agent). The selection of facilities for this type of tourist is the same as *organizing mass tourists*, namely prioritizing comfort and choosing adequate tourism facilities, including staying in tourism accommodation such as hotels, hostels, and homestays/villas. Based on the survey results, all respondents or 100% were *Individual Mass Tourists*.

3. *Explorer*

    This type of tourist organizes his own trip, but still uses the help of a travel agent if needed. They are more likely to avoid meeting other tourists, and travel alone or only with those closest to them. *Explorers* usually mingle with local residents, such as living in people's homes in rural areas, but still expect comfort and security. Apart from that, they also do not have a definite itinerary and tend to be spontaneous in choosing tourist attractions. Based on the primary survey, there are no foreign tourists who stay overnight in people's homes and travel in rural areas, because the concentration of foreign tourists travels only in urban areas of Yogyakarta and most visit Prambanan Temple in Sleman Regency, which is still in urban areas. So the percentage of tourists in this classification is 0%.

4. *Drifters*

    This type of tourist does not use the services of a travel agent at all, and does not expect too high a standard of facilities. They also don't plan their itineraries in advance, and mingle more with the local population over a longer period of time. This type of tourist is an *allocentric type* who tends to look for new and previously unexplored tourist attractions and travel alone. Therefore, based on the survey results, there are no foreign tourists who fall into the *drifter category*, so the percentage of tourists in this classification is 0%.

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**Figure 11. Heat Map of Domestic Tourist Visits to Tourist Attractions Yogyakarta Special Region**



**Figure 12. Heat Map of Foreign Tourist Visits to Tourist Attractions Yogyakarta Special Region**

### Analysis of the Effect of Integration of Public Transportation Modes on Types of Tourism and Characteristics of Foreign Tourists

The aim of this research is to examine how much influence the integration of public transportation modes has on the type of tourism and characteristics of foreign tourists in tourism development in the Special Region of Yogyakarta. After carrying out calculations via the SPSS application, the results of the ordinal regression analysis are obtained as follows.

a. *Pseudo R-Square*

**Table 2. Pseudo R-Square**

| Pseudo R-Square | | |
|---|---|---|
| Snell | Cox and | ,242 |
| | Nagelkerke | ,285 |
| | McFadden | ,147 |
| Link function: Logit. | | |

Pseudo R-Square (Table 2) shows how much the independent variable/public transportation with tourist attractions in DIY. So the resulting Cox and Snell value is 24.2%, the Nagelkerke value is 28.5% and the McFadden value is 14.7%. The percentage value in the Pseudo R-Square table indicates the magnitude of the influence of the independent variable on the dependent variable. This percentage value answers the research objective, namely "How much influence does the integration of public transportation modes have on the type of tourism and characteristics of foreign tourists in tourism development in the Special Region of Yogyakarta." So the average percentage value of influence obtained is 22.47%. Meanwhile, the other 77.53% are other variables outside the variables in this research, which can be input and suggestions for further research.

b. Partial Test (Parameter Estimates)

**Table 3. Parameter Estimates**

| Parameter Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Estimate | Std. Error | Wald | df | Sig. | 95% Confidence Interval | |
| | | | | | | | Lower Bound | Upper Bound |
| Thresholds | [Perception = 1] | -17,810 | ,331 | 2890,949 | 1 | ,000 | -18,459 | -17,161 |
| | [Perception = 2] | -17,129 | ,298 | 3310.957 | 1 | ,000 | -17,713 | -16,546 |
| Location | [TOURIST ATTRACTION=1] | -17,662 | ,427 | 1712.676 | 1 | ,000 | -18,498 | -16,825 |
| | [TOURIST ATTRACTION =2] | -16,058 | ,000 | . | 1 | . | -16,058 | -16,058 |
| | [TOURIST ATTRACTION =3] | 0 ᵃ | . | . | 0 | . | . | . |
| | [Psychography=1] | -3,100 | 1,115 | 7,722 | 1 | ,005 | -5,286 | -.913 |
| | [Psychography=2] | 0 ᵃ | . | . | 0 | . | . | . |
| | [Behavior=1] | 0 ᵃ | . | . | 0 | . | . | . |
| Link function: Logit. | | | | | | | | |
| a. This parameter is set to zero because it is redundant. | | | | | | | | |

Based on the partial test in the Parameter Estimates (Table 3) on variables with significant values, the following ordinal regression modeling results are obtained:

a. Logit p1 = -17.810 + (- 17.662$X_1$) + (- 3.1$X_2$)
b. Logit (p1+p2) = -17.129 + (- 17.662$X_1$) + (- 3.1$X_2$)

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Where p1 is the probability of not agreeing with the integration of public transportation with tourist attraction objects in DIY, while p2 is the probability of being unsure about the integration of public transportation with tourist attraction objects in DIY. From the model above, we can proceed to the ordinal regression equation as follows.

a. The influence of the TOURIST ATTRACTION = 1 (Cultural TOURIST ATTRACTION) variable on the perceptions of foreign tourists in the integration of public transportation with tourist attractions in DIY; if the variable Cultural TOURIST ATTRACTION = 1, and other variables are considered 0 (constant) then:

$$\text{p1} = \frac{Exp\,(-17,810 - 17,662)}{1 + Exp\,(-17,810 - 17,662)} = \frac{-35,472}{1 - 35,472} = 1,029009051$$

$$\text{p1} + \text{p2} = \frac{Exp\,(-17,129 - 17,662)}{1 + Exp\,(-17,129 - 17,662)} = \frac{-34,791}{1 - 34,791} = 1,029593679$$

p2 = 1.029593679 − 1.029009051
p2 = 0.000584628

Based on these results, it can be concluded that an increase of 1 (one) foreign tourist visiting a cultural tourist attraction will reduce the probability of disagreeing (p1) by 1.029009051 or 1.03% and reduce the probability of being doubtful by 0.000584628 or 0, 0006%.

b. The influence of the Psychographic variable=1 (*Psychocentric*) on the perceptions of foreign tourists in the integration of public transportation with tourist attractions in DIY; if the *Psychocentric variable* = 1, and other variables are considered 0 (constant) then:

$$\text{p1} = \frac{Exp\,(-17,810 - 3,1)}{1 + Exp\,(-17,810 - 3,1)} = \frac{-20,91}{1 - 20,91} = 1,050226017$$

$$\text{p1} + \text{p2} = \frac{Exp\,(-17,129 - 3,1)}{1 + Exp\,(-17,129 - 3,1)} = \frac{-20,229}{1 - 20,229} = 1,052004784$$

p2 = 1.052004784 − 1.050226017
p2 = 0.001778767

Based on these results, it can be concluded that an increase of 1 (one) Psychochentric foreign tourist will reduce the probability of disagreeing (p1) by 1.050226017 or 1.05% and reduce the probability of being doubtful by 0.001778767 or 0.002%.

## CONCLUSION

Assessment of integration between public transportation modes in DIY from four transportation nodes which are considered good. The integration of public transportation with tourist attractions in DIY is still weak because only Trans Jogja as BRT serves the urban area of Yogyakarta City, such as Trans Jogja Route 1A. Even though the average integration value reaches 95.31%, what needs to be emphasized and emphasized here is that the aspect of integration value that does not meet is a crucial aspect in the operational performance of public transportation, namely the operational aspect with indicators of accurate departure schedules, accurate arrival schedules, and waiting time. Because if public transportation modes are not on schedule with long waiting times, it can reduce public interest, including tourists who want to visit tourist attractions using public transportation. However, the high

demand from foreign tourists at several tourist attractions has been covered by accessibility through the mode of transportation used by most foreign tourists, using vehicle rentals. This accessibility also includes the ease of foreign tourists renting vehicles. This condition is stable and has been a favorite for foreign tourists to travel to DIY for many years. This is relevant to the results of statistical tests where only 22.47% of the influence of public transportation integration has on the types of tourist attractions and characteristics of foreign tourists when seen from foreign tourists' perceptions of the integration of public transportation with tourist attractions in DIY.

The limitations of the study in this study can be identified into two aspects, namely based on the aspect of the scope of the area and the aspect of the scope of time and the acquisition of primary survey results. So, with the limitations of this study, there needs to be more recent further research: This study has a provincial scale area scope with a total primary data collection period of 10 days. So that it experiences limitations in the scope of the primary survey, especially the observation of potential tourist attractions with foreign tourists in DIY; This study only examines Tangible Tourism; The survey results that show the behavioral factors of foreign tourists are only individual mass tourism are one of the weaknesses of the study because the characteristics of foreign tourists are less diverse.

The suggestions for further studies to sharpen the topic of tourism transportation and types of tourism and characteristics of foreign tourists in the development of tourism in DIY are as follows: It is necessary to examine Intangible Tourism as a characteristic of tourist attraction objects; Further research is expected to use tourist destination locations that are well and comprehensively integrated with public transportation. So that researchers can assess the level of tourist satisfaction in using public transportation integration services with tourist attraction objects.

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