

Statistical Mobility Pattern Of Solo-Yogyakarta Commuter Workers By Prambanan Express Train

Priyono, Choirul Amin, Umrotun, Afiotria Intan Wulansari, Suliadi Sufahani

Abstract: This research was done in two cities; Solo and Yogyakarta which is connected by Prambanan Express (Prameks) Train. The objectives of this research are as follows: (1) Reviewing the characteristic of Solo-Yogyakarta Prameks Train users, (2) Reviewing the mobility pattern of Solo-Yogyakarta Prameks Train users. The character of workers that are being reviewed are based on age, education background, job status, income, and the number of family dependents, while the worker's mobility pattern that will be studied are: the usage intensity of the Prameks, transportation modes used to go to the departure station and work office, departure and arrival station, the worker's reason in choosing the departure and arrival station, origin and destination area of the worker. Questionnaire is used as a survey method in this study. Purposive Proportional Quota Sampling is also used as the sampling technique to gathered samples. Respondent are limited to 100 workers and divided into two categories; 50 men and 50 women and assumed capable to represent the workers' characteristic. The research results show that the workers are still in a productive age that are dominated by 21-25-year-old worker, bachelor degree as the highest education level, permanent employees with salary around 3-6 million Rupiah per month, and do not have any family dependent. Most of respondent's origin area are Laweyan, Kartosuro, and Banjarsari district, where the locations are closer to the Purwosari and Solobalapan station. The district that were mostly mentioned as the destination in Yogyakarta includes Gondokusuman and Depok area, which are close to Lempuyangan and Maguwoharjo station.

Index Terms: Commuter Workers, Mobility Pattern, Prameks Train, Proportional Quota Sampling, Sampling Technique, Survey Method.

1 INTRODUCTION

MOBILITY is a movement that is done to fulfill people's needs. Mobility based on economical factor usually occurs among working citizen with productive age and do not have many family dependents. This is due to flexibility in activity compared to those who are not in productive age. Furthermore, the attractiveness of the destination and the transportation mode to the destination is also important. This is because the destination (workplace) should offer better opportunity and advantages compared to worker's hometown. Meanwhile, the transportation itself is used as a tool to reach the destination, so that the choice of transportation mode has to be precise and convenient when it is used [1], [2], [4] and [6]. Solo and Yogyakarta cities are big cities that attract the surrounding citizen to migrate to these cities. The migration is done to fulfill their needs such as economical need, education, or even only as a holiday destination [3], [5] and [7]. The location is quite close and the circular mobility can be done by traveling to work and come back home in the same day or by having a temporary living place. Circular mobility can be done properly if it is supported with a proper transportation mode.

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The transportation mode can be used to fulfill the worker's need and skills. Some transportation modes that can be used to reach a destination are privately owned vehicle, bus, train, airplane, or ships. Current favorable transportation mode among the citizen for land trip is train [9] and [10]. Train is a national and international-scale transportation mode that has many advantages. For example, it produces low amount of gas emission, uses only small area of land for its rail track, able to carry many people at once. For the cost and traveling time aspects, a train ticket for one trip is quite cheap and it is faster to reach the destination compared to other land transportation mode. Because of this many advantages, more people has been using the train. It is hoped that the provided facility in the train will be developed in the future, especially Prambanan Ekspres (Prameks) in the Solo-Yogyakarta route, so that this mode will still be the chosen transportation mode for the citizen from both cities [11], [12], [15] and [16]. Prambanan Ekspres (Prameks) train is one of the favorable transportation mode for Solo and Yogyakarta citizen or any other cities train station are passed by this train. By using Prameks, commuter is able to reach big cities to fulfill their needs. Prambanan Ekspres is the heart of economy and daily lives for Solo and Yogyakarta citizen, because they could travel to work and come back home every day using this train [13], [14], [17] and [18].

TABLE 1 NUMBERS OF PRAMEKS TRAIN PASSENGERS

No.	Year	Number of passengers per year	Average number of passenger per day
1	2014	1.666.697	4.566
2	2015	1.697.571	4.650
3	2016	2.750.372	7.535

Source: PT Kereta Api Indonesia Daop VI, 2017. People who travel to Solo and Yogyakarta using Prambanan Ekspres train are classified to several types. One of the type is workers with certain purpose(s) [19] and [20]. People who choose to work in Yogyakarta City are influenced by several factors. Even though Solo has a higher regional minimum work wage (UMR) or minimum work wage (UMK) compared to Yogyakarta, but Yogyakarta has another interesting factor such as the

abundance of corporation located in the city, universities, and especially tourism places that gives unique attractions of Yogyakarta to investors and companies. Moreover, Yogyakarta also has more complete infrastructures compared to Solo City [21]. Prambanan Express (Prameks) train stops en-routes from Solo to Yogyakarta are Solobalapan, Purwosari, Klaten, Brambanan (not often), Maguwo, Lempuyangan, and Yogyakarta (Tugu) station. Concerning on high interest of citizen in using the Prameks train, this mode has experienced a lot of changes. For example, it operated twice a day with ticket price of Rp. 2000. Furthermore, there is an additional train that operate ten times a day with ticket price of Rp. 8000, and the ticket can be bought 1 week before departure time that was applied starting from 13 June 2016 [22]. Based on the backgrounds mentioned above, the problems can be summarized into: What is the characteristic of Prambanan Ekspres (Prameks) train user from Solo to Yogyakarta, and, what is the commuting behavior of Prambanan Ekspres (Prameks) train user from Solo to Yogyakarta?

2 RESEARCH METHOD

This research utilizes the survey method, so that the author can get the information directly from the respondents by using questionnaire. The population that being considered in this research is the workers who are using Prambanan Ekspres (Prameks) train from Solo-Yogyakarta. Non Probability is used as the sampling method and through the method not all of the population member have the same chances to be chosen as the sample respondent due to certain characteristic and consideration set by the author [23], [24], [25] and [26]. Purposive Proportional Quota Sampling is used because the characteristic of the sample member, with a deep consideration, will represent the population’s characteristic that have been chosen before. ‘Proportional’ means that this research will take 50 women and 50 men as the respondents. While Quota Sampling is used because the total number of Prambanan Ekspres train commuter is unknown. The researcher limits the number of sample to 100 respondents. Besides the sample limit, the sample gathering period is also limited to 5 working days in a week, and the sampling is done in 4 trips in a day [27], [28], [30], [33] and [36]. The sample is taken from Monday to Friday, because the researcher believes that there are a lot of workers commuting to Yogyakarta using Prameks train. Traveling time from Solo to Yogyakarta takes around 50 minutes, therefore the researchers only able to take 5 respondents in every trip. Sample gathering is done in the early departure hours and after working hours [29], [31] and [32].

TABLE 2 THE TIME OF COLLECTING SAMPLE

Sample Period	Trip	The time of collecting sample
I	Solo – Yogyakarta	05:15
II	Solo – Yogyakarta	07:20
III	Yogyakarta – Solo	17:02
IV	Yogyakarta – Solo	20:02

Sample gathering period is done in those time due to the large amount of workers traveling to and from work office, therefore it is chosen as the best time to do sample gathering [34] and [35].

3 RESULT AND DISCUSSION

3.1The Characteristic of Commuter Workers Uses Prameks Train

The characteristic or identities of workers involves age, current education background, job type, income, and the number of family dependent(s).

3.1.1 Respondent’s Age

Age is one of the important characteristic of a person, because this aspect is closely related to a certain person’s activities. Based on the age structure, the citizen is splitted into 3 groups; 0-14-year-old group which is a non-productive age group, 15-64-year-old group who is in a productive age, and ≥ 65-year-old group who is already passes the productive period. Education level of respondents is dominated by bachelor degree graduate with 90% or 45 workers, such as 24 men (48%) and 21 women (42%). Meanwhile, the respondent with junior high school level share the lowest percentage with only 6% or as many as 3 workers, 1 man and 2 women. This result shows that good education is needed when people want to migrate so that they are able to compete and obtain a better job as expected.

3.1.3 Respondent’s Job Status

Job defined in this research consist of all type of job status from the circular workers in Yogyakarta.

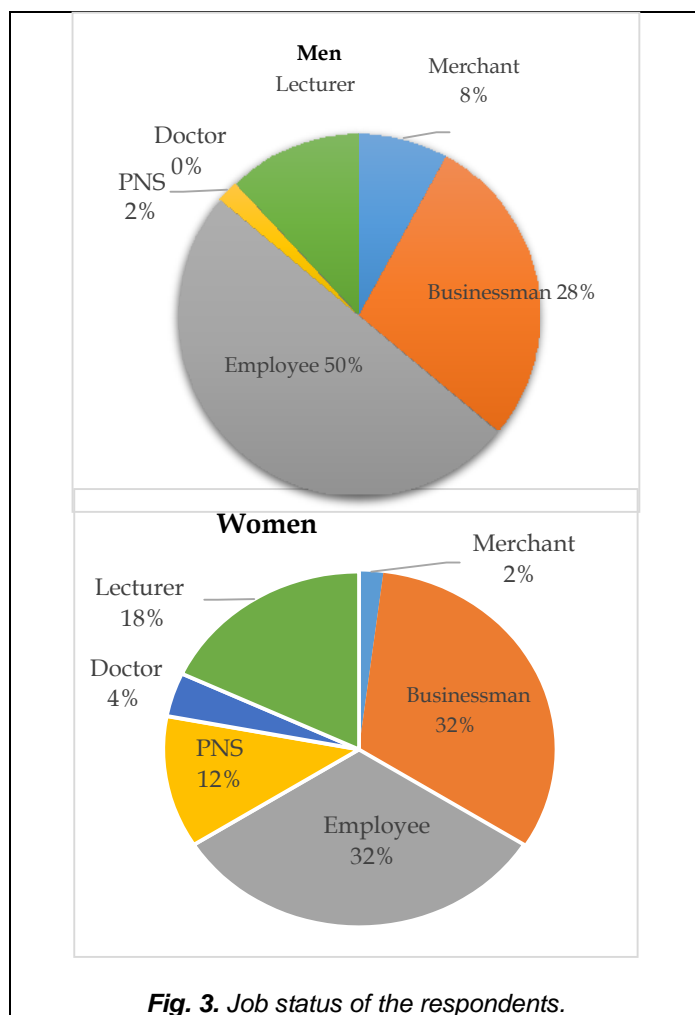


Fig. 3. Job status of the respondents.

Survey results from 100 respondents show that most of them work as an employee with 82% or 41 people with 28 men (56%) and 16 women (32%). These employees work in hospital, bank, sales or sales promotion girl in a mall. On the other hand, 10% or 5 merchants contain of 4 men and 1 woman, doing trades in Brinjarjo market and Malioboro area. The business people are dominated by women with 16 people and 14 men. The government employees work mostly in offices or government agency e.g. Sleman Social Services, Central Bureau of Statistics office. There were only 2 female doctors working in Sardjito Yogyakarta Hospital. Teachers mostly come from lecturer group teaching in Universitas Gajah Mada, Universitas Negeri Yogyakarta and few other private universities and schools. The abundance of workers in Solo as an employee in Yogyakarta are affected by the number of big companies and jobs available in this city.

3.1.4 Respondent's Income

Income defined in this research as all of income number obtained by the workers from the workplace in a month time in form of Indonesian currency. Respondent with salary around Rp. 3.1 – 6 million dominates the result with 82% or 41 workers from a total of 100 workers containing of 24 men (48%) and 17 women (34%).

Workers with the lowest salary with wage ≤ Rp 1 million shares 12% or 6 workers which are 3 men and 3 women. Meanwhile, workers with the highest salary ≥ Rp 9 million consists of 4 male workers and 4 female workers. The high salary corresponds positively with the profession level such as doctors and businessman.

3.1.5 Number of Respondent's Family Dependent(s)

The head of a family has a big responsibility for their family. The number of family dependent defined here is the total number of family member such as husband/wife, children, or parents. The survey results from 100 respondents show that many of the workers still do not have any family dependent, with 64% of the total survey results or 32 workers, consisting of 10 men (20%) and 12 women (24%). There are 28 workers who have 2 family dependents, consisting of 15 men and 13 women. Furthermore, only 2 workers who have more than 4 family dependents, consisting of 1 man and 1 woman. The number of family dependent will affect motivation of a person to do migration, such as choosing the destination, behaviour in migration and in choosing the type of work.

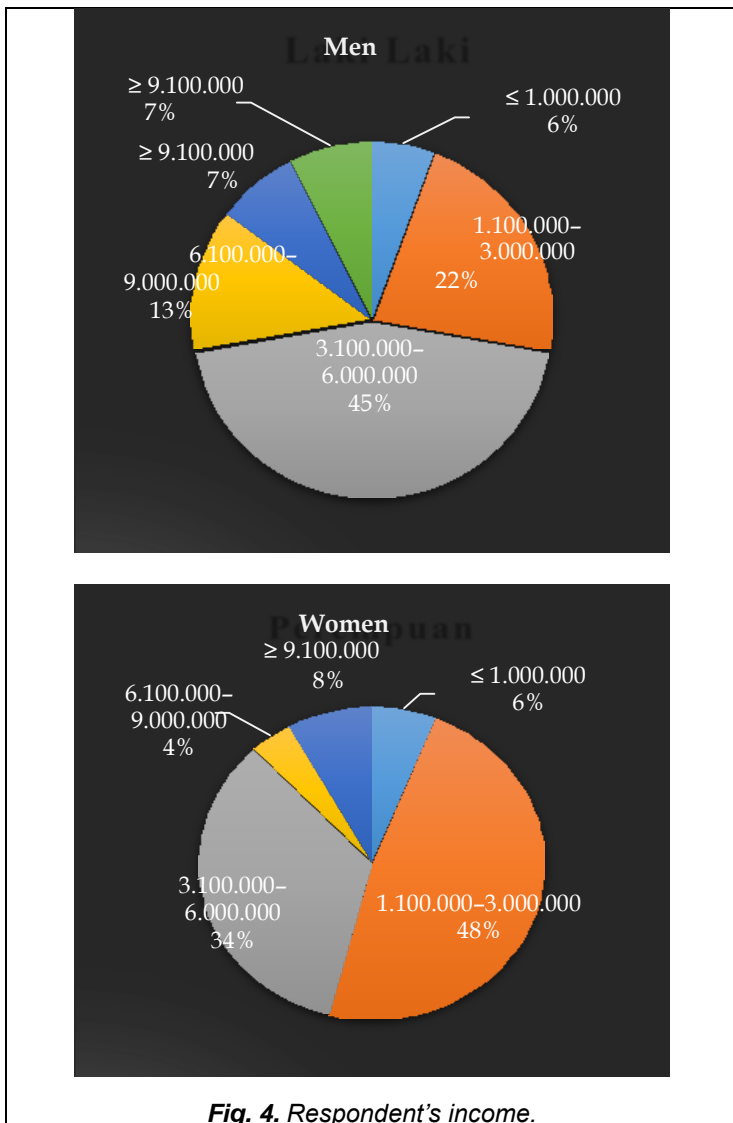


Fig. 4. Respondent's income.

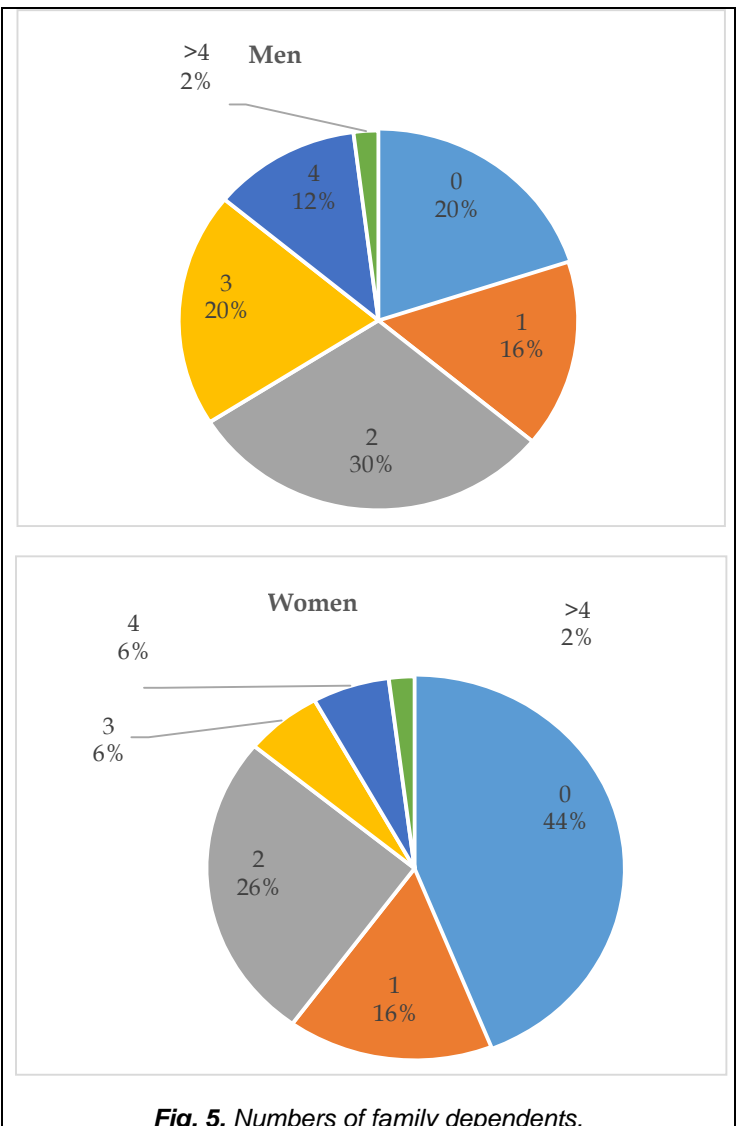


Fig. 5. Numbers of family dependents.

The workers commuting using Prambanan Ekspres are generally in the productive age. This is known based on the result where workers aged 21-25 years old dominated the total number of workers traveling from Solo to Yogyakarta with 53% or as many as 26 workers, consisting of 11 men (22%) and 15 women (30%). The number female worker is larger than the number of male workers. The male workers dominated in 26-30 age group with 26% or 13 workers. This phenomenon may occur because of the condition where a woman does not have as many family dependents compared to the male worker has. Therefore, the female workers have more flexibility. In contrast, men with 26-30-year-old age group is in a high spirit in finding a job and several of them already have a family dependent, and workers prefer a job with bigger salary even though they have to go outside the city. The worker's age affects the decision to move to other city, because younger workers in the productive age are more agile in moving and also they are believed to have better body endurance compared to those whose age are already near the non-productive age, hence through travelling they can fulfil whatever they desire. This phenomenon is consistent with the research result from Todaro (1976) Mantra, (1990) who stated that young age is more able to do activity to reach their target. In the study case of Malang City migration is about the people who do the round trip to Surabaya by using bus and the result shows that most of the workers traveling from Malang to Surabaya are Diploma holder with 35 people or equal to 70% from a total of 50 respondents. Job status is one of the reason for a person to migrate outside of their town. Furthermore, job status is also closely related to education, because education level is proportional to the job status of a person. Many people from Solo become employees in Yogyakarta with 82% or (equal to 41 workers), consisting of 28 men (56%) and 16 women (32%) and it is dominated by male workers. On the other hand, female workers dominate in the business aspect with 16 workers. Male workers are more agile than women so that there are more male workers who become employees. Meanwhile, female workers dominate the businessman aspect because woman tend to be more precise and patient in doing and facing any obstacles. Therefore, women are more suitable to do business than becoming an employee. This condition is proportional to the theory explained by Anwar (2009) who said that a good skill will be obtained through good education level, which will give work opportunities that is related to the skills. Income obtained by the workers is affected by job status. In migration, the income received by the workers is also one of the attractiveness provided by the destination. Workers with salary of Rp.3.100.000 – 6.000.000 dominates the workers going from Solo to Yogyakarta with 82% (or equal to 41 workers) from a total of 100 workers, consisting of 24 men (48%) and 17 women (34%). The salary range is dominated by the men's salary, while the female workers dominates the salary range of Rp. 1.100.000 – 3.000.000. This happened because the male respondents mostly work at big companies and becoming BUMN employee, while the female respondents only work as bank employee or sales. This makes the male respondents to have a better selling point than the female respondents. These salary range is already above the City/District Minimum Wage (UMK) of Solo City and D.I Yogyakarta. This is inline with the research result of Eliza Ummi (2010), stating that circular mobility doer from Bragung village to the Guluk-Guluk sub-district and Sumenep district experienced an income increase so that the migrant was able

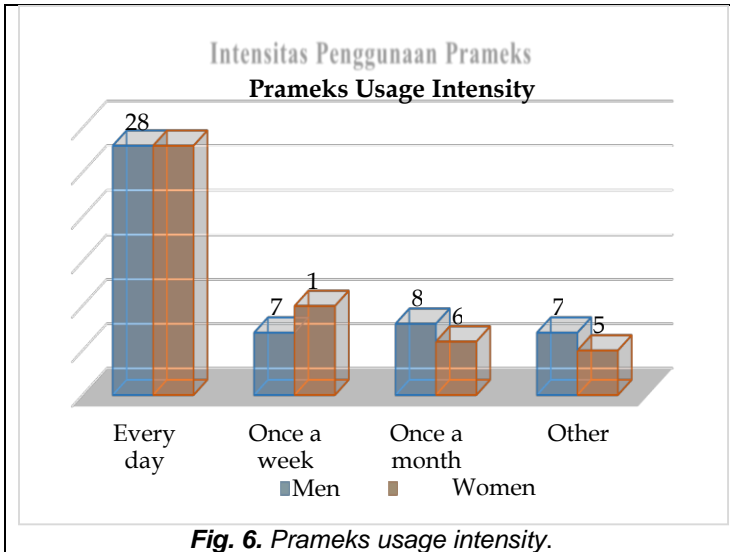
feed his/her family properly and to fill up their daily needs. Workers from Solo mostly do not have any family dependents, with 64% (or as many as 32 workers), consisting of 10 men (20%) and 12 women (24%). The female workers dominate the men. The male workers dominate the family dependent data with 2 family dependents, which includes wife and a child or a wife and parents. Based on the age group, the female workers are dominated by 21-25-year-old age group, in which the women in this age group are not yet married and do not have any child. On the other hand, male workers are mostly in 26-30 year-old and most of them are already married and may already have children. As the family dependent number gets lower, the more flexible for the people to migrate and they do not have much life responsibility. In a time like this, workers still look for the most suitable job and it is possible that the workers have not produced much money so that they choose to stay at the destination city. This phenomenon is in line with the concentric theory of Burgess (1925) who said that the region around a central region is commonly surrounded by workers with minimum level of economy level.

3.2 Mobility Pattern of Commuter Workers Uses Prameks Train

The mobility pattern defined here is the habit that is done by the workers in a certain time period to reach the destination. The behaviour that will be reviewed are: Prameks usage intensity, transportation mode used to go to the first station and work office, first station and destination that is used by the workers to depart and get off from Prameks, the reason in choosing the first and arrival point, origin and destination district of the workers.

3.2.1 Usage Intensity of Prameks Train

The intensity defined here is the level of often or not the workers use the Prambanan Ekspres train to travel to D.I Yogyakarta. The intensity of Prameks usage is dominated by a round trip from morning until evening in every day with 112% (or equal to 56 from a total of 100 workers), consisting of 28 men (56%) and 28 women (56%). There are 34% of workers who uses the Prameks once in a week (or as many as 17 workers), consisting of 7 men (14%) and 10 women (20%). The workers who use Prameks once in a month shares 28% (or equal to 14 workers), consisting of 8 men and 6 women. The other intensity number were obtained from 12 workers consisting of 7 men and 5 women. These people only use Prameks when there are work opportunities in Jogja, or the people want to try the train personally. This Prameks usage intensity can be affected by the number of family dependents. The bigger number of the family dependent, the higher number of workers will commute to the destination area.



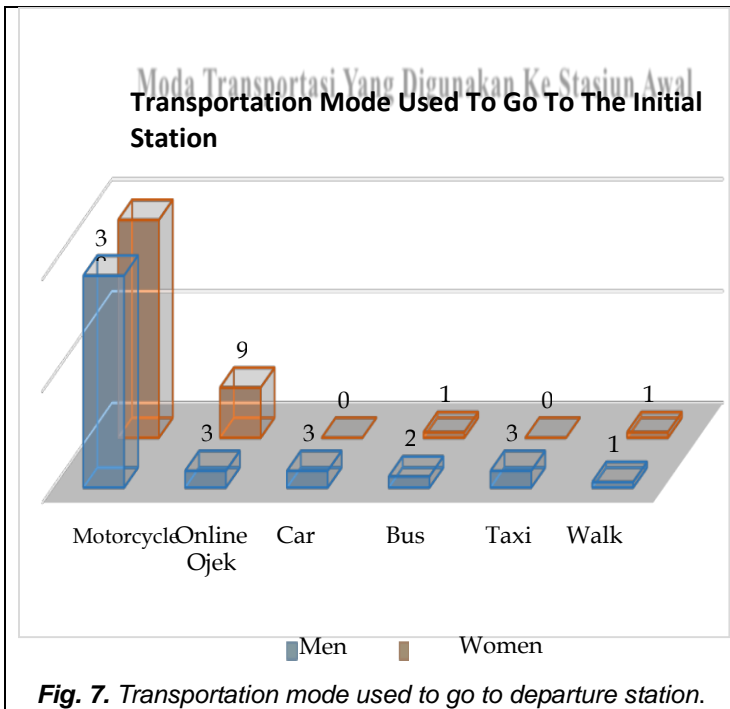
distance, cost, a person's need, and also the safety level in using it. In this condition, motorcycle is assumed to be effective by most of the workers because of the good convenience level and it is more simple to use compared to other transportation mode.

3.2.3 Transportation Modes to the Workplace

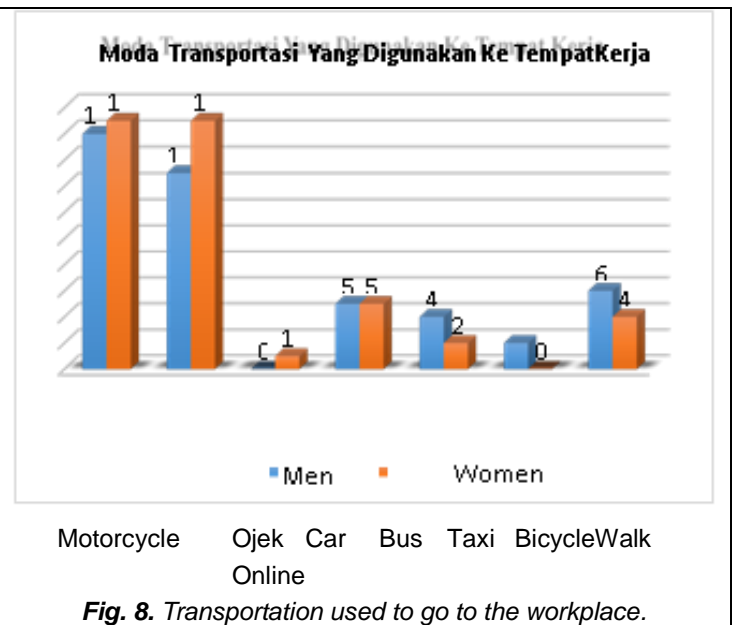
The transportation defined here is the vehicle used by the workers to go to the workplace after getting off from the Prambanan Express train. Transportation that being used by the workers from the station to the workplace are motorcycle with 72% or equal to 37 workers, consisting of 18 men (36%) and 19 women (38%). Online-based transportation user with 68% or 34 workers, which are 15 men (30%) and 19 women (38%). There is only 1 woman who uses car to the workplace, while there are 20% of workers or 10 workers who uses bus, which are 5 men (10%) and 5 women (10%). Taxi user shares 12% or 6 workers with 4 men (8%) and 2 women (4%). There are 2 men who uses the bicycle. Lastly, there are 20% or 10 workers who walk to the workplace, consisting of 6 men (12%) and 4 women (8%) Motorcycle has still been the favorite transportation mode for workers, this may be caused that the workers have more than one motorcycle, 1 is used in the origin city, while the other one is used in the destination place.

3.2.2 Transportation Mode Used to Go to the Departure Point

Transportation defined here is the transportation that is used by workers to go to the departure point (station) before departing using Prameks train.



A proper transportation to be used to travel to the station is crucial for workers. There are 77 workers (146%) who uses motorcycle to go to the departure point, consisting of 38 men (78%) and 39 women (74%). There are also workers who uses online-based transportation mode such as Gojek, Grab, Uber, and others with 24% or 12 workers, which consist of 3 men and 9 women. Furthermore, there are 3 men who drives a car to the departure point. Bus is also used by 3 workers, 2 men and 1 woman, while taxi is used by 3 men only. On the other hand, there are also 2 people who choose to walk to go to the station, 1 man and 1 woman. Transportation used by the workers to travel to the departure point is based on the



3.2.4 Departure and Arrival Point

Departure point defined here is the first station that is chosen by workers to go to their destination, while the Arrival point is the last station stop for the workers to go to the workplace.

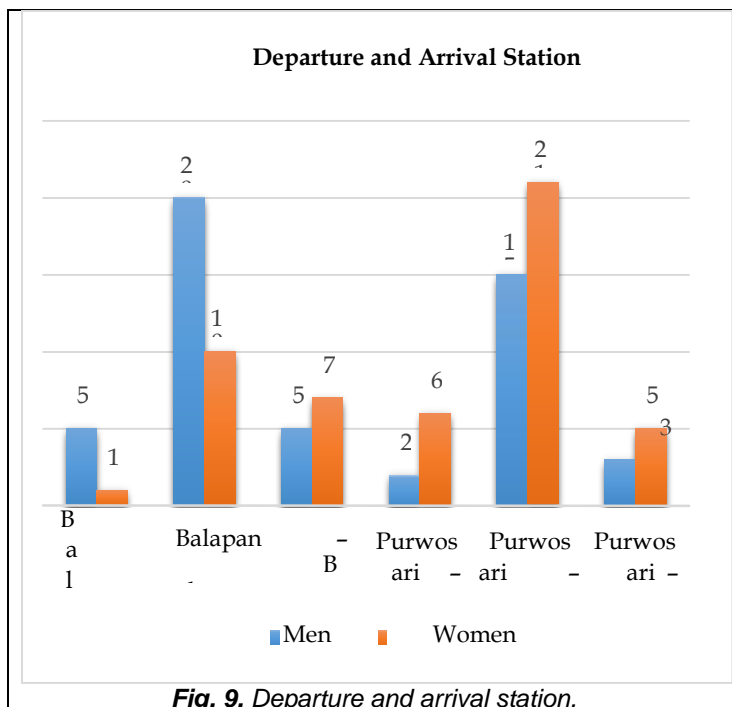


Fig. 9. Departure and arrival station.

Commuter workers from Solo to Yogyakarta using Prameks Train can take the train from two stations which are Solobalapan and Purwosari Station. Meanwhile, there are three possible arrival station which are Maguwoharjo located in Depok, Sleman district, Lempuyangan and Tugu station that is located in Yogyakarta City. The available stations give more flexibility for the workers to choose where to get on and off the train depending on their needs. The most concentrated station used by workers for getting on and off the train is Purwosari station to Lempuyangan, where in this route there are 72% workers or equal to 36 workers, consisting of 15 men (30%) and 21 women (41%). Solobalapan-Lempuyangan route is chosen by 60% or 30 workers, consisting of 20 men (40%) and 10 women (20%). Balapan-Maguwo route was used by 6 workers consisting of 5 men and 1 woman. Balapan-Tugu station shares 24% or 12 workers with 5 men and 7 women. Purwosari-Maguwo station has 16% or 8 workers consisting of 2 men and 6 women. Lastly, there are 8 workers who choose Purwosari-Tugu which consist of 3 men and 5 women. The choice of station by the workers is influenced by 3 factors which are distance, station's convenience, and the cheap price of the provided parking lot.

3.2.5 Reasons in Departure and Arrival Point

Respondent choose the departure station to the workplace in order to ease the mobility. The departure point defined here is the departure station from Solo, which are Solobalapan dan Purwosari station. The reason why the workers take the train from the departure point is because of 2 possible factors; (i)convenience factor and (ii) the distance from home. The convenience defined here is the possibility to get a seat when a person gets on the train, and the factor of the space inside the train. The passenger's convenience is chosen by 24% or 12 workers, which consist of 8 men (16%) and 4 women (8%). Workers who get off in the arrival point have 3 factors in them, such as the close distance to the workplace, close to the other transportation mode, and cheap parking price. The close from workplace factor dominates the result with 158% or chosen by

79 workers, consisting of 37 men (74%) and 42 women (84%). The proximity to the other transportation mode which is Tugu Station takes 32% or 16 workers consisting of 11 men (22%) and 5 women (10%). The cheap parking price factor exists in Lempuyangan station with 10% or 5 workers, which consist of 2 men and 3 women or 6%. The dominant reason when people choose an arrival point is the proximity of the arrival point to the workplace. This reason is similar to the reason in choosing the departure point, where workers dominantly choose the proximity from home factor.

3.2.6 Origin Area of Respondents

The place of origin defined here is the sub-district where the workers live. By knowing the home address, then the mobility or distribution of workers from Solo to Yogyakarta can be known as well. Citizen who travels to Yogyakarta for work are mostly came from Sukoharjo district which are dominated by Grogol and Kartosuro sub-district. There are 13 workers from Grogol sub-district with 9 men and 4 women, while Kartosuro has 14 workers with 4 men and 10 women. On the other hand, Solo city is dominated by workers from Banjarsari sub-district with 17 workers, consisting of 8 men and 9 women. Laweyan has 15 workers which consist of 5 men and 10 women. These numbers happen because of the proximity of the station from their home with departure station that is located in Solo region.

3.2.7 Destination Area of Commuter Workers

The destination is defined here is the address based on the area set as the destination by the worker. By knowing the destination area, then the mobility pattern of workers from Solo to Yogyakarta can be known as well. Commuter workers from Solo to Yogyakarta are dominated by Gondokusuman as the destination with 21 workers consisting of 9 men and 12 women. Depok has 19 workers with 10 men and 9 women. These sub-district is very close to the lempuyangan station, with several other sectors such as education, health, trading, and offices. In contrast, the region with the least number of workers are Sleman, Margansari, Godean, Kratonan, Sewon and Wirobrajan which are far from the station. Mobility pattern of a migrant who go through long distance place with the availability of infrastructure tend to go to the trading centers and important industries (Teori Migrasi, Everett S. Lee, page 3-4). Convenience factor, effectivity and efficiency provided by Prameks highly influence the intensity of trip of a worker from Solo to Yogyakarta. Many workers who do a round trip every day with which is 112% or 56 respondents. Other than the factor mentioned above, the number of family dependent dan the status as the head of a family also affect to the intensity in doing mobility. Beside the work responsibility, the head of family also has the responsibility to their family at home. This condition also corresponds to the research result of Annugrah Mujito P (2013). In a migration case in Malang shows that workers need to keep working at Surabaya and doing a round trip everyday by bus. Most of the workers state that the reason is to fulfil their responsibility at home and also job demand. Transportation mode that is chosen from the departure point to the arrival point in Yogyakarta is highly influenced to the needs desired, e.g. the need to arrive quickly to the location, cheap, and affordable. Most of the workers from Solo uses motorcycle to reach the departure point with 146% or 77 workers consisting of 38 men (72%) and 39 women (74%). To reach the workplace from the arrival point, workers still choose a motorcycle with 72% or 37 workers consisting of 18 men

(36%) and 19 women (38%), because motorcycle is assumed to give more flexibility for traveling and do not bound by time, therefore the user can predict the travel time to reach the destination. Meanwhile, the online-based transportation mode to the departure point is mostly chosen by female workers with 9 women and 3 men. To reach the workplace from the destination location, this type of transportation is also chosen mostly by women with 19 women and 15 men. This condition occurs because the women feel more convenient and safe rather than riding their own motorcycle. Men are more agile in driving vehicles compared to women. The research result is in line with the theory explained by Djoko Setijowarno and Frazila (2001) in the introduction of transportation system that every transportation mode has a unique characteristic, such as in term of speed, service, ability to carry goods and travel intensity. The choice of initial and arrival point is mostly influenced by many factors. One of the factor is the distance. The closer the distance then the higher number of people will go there and this apply vice versa. Purwosari station to Lempuyangan is mostly used by workers to reach Yogyakarta where there are 72% or 36 workers use this route, consisting of 15 men (30%) and 21 women (41%). The choice of station has other factor affecting it, such as the convenience level provided by the station such as the less crowded station and parking lot Purwosari station, cheap parking price in Lempuyangan station so that there will not be much expenses or cost to reach the workplace. Lastly, the availability of the other transportation mode such as that in Tugu station. The more other transportation mode available than the less obstacles exist to reach the destination. Worker who uses Prameks to Yogyakarta tend to come from areas which are located near the station. This happens because it is easier and closer to go to the station, e.g. Balapan station is dominated by workers from Banjarsari. Purwosari station is dominated by people from Laweyan and Kartosuro subdistrict. On the other hand, workers who get off in the maguwoharjo station tend to go to Depok subdistrict, Sleman District, while Lempuyangan and tugu station have workers who want to reach Gondokusuman and Umbulharjo. Moreover, citizen who are far from the station more prefer other transportation mode such as bus or other vehicle so that the workers do not have to change transportation often. This phenomenon is in line with migration and distance theory by Everett S. Lee who stated that; (i) The number of migration only reach a short distance and the number of migrant in a certain center that can accommodate migrants decrease because of the further the distance that has to be reached (Teori Migrasi Page 2-3) and (ii) Migration that travels long distance generally more prefer travel to trading and industrial centres (Teori Migrasi page 3).

4 CONCLUSION

The Characteristic of commuter workers using Prameks train is dominated by productive-age workers (16-55 years old), workers with bachelor degree education level, office employees in Yogyakarta, salary range of Rp. 3-6 millions per month and have not had any family dependent. A lot of workers uses Prameks train with a reason that it is convenient, cheap, fast and on-time. This is proven with the abundance of workers doing round trip every day. The transportation mode used by the workers to reach the departure point and workplace is dominated by motorcycle. Purwosari and Lempuyangan station is dominated by workers who want to reach Yogyakarta by using Prameks train. This activity is

based on the closer distance to workplace that workers have to reach compared to other station, due to the condition where the workers mostly come from Laweyan and Kartosuro area. In these 2 areas, Purwosari station is closer to be reached compared to the Balapan station. Lempuyangan station is favourable because of the location which is close to Gondokusuman area. Gondokusuman is located in Yogyakarta city with many education centre and corporations that makes this subdistrict chosen as the destination for commuter workers from Solo. This condition is in line with the migration theory by Everett S. Lee about volume and migration current.

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