

Examining Factors of Modal Shift to P2P: The Case of SM Masinag-Greenbelt 5 Route

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Abstract: For a long time, the main transport mode of passengers from Antipolo City to Makati City is either Asian Utility Vehicle or private cars. This leads to proliferation of small-occupancy vehicles, and thus contributes to traffic congestion along this route. On April 2018, a Point-to-Point Premium Bus Service (P2P) was introduced from SM Masinag (Antipolo City) to Greenbelt 5 (Makati City) to provide a better alternative commuting experience for the passengers and to somehow improve traffic congestion in that area. The study surveyed eighty-seven (87) actual P2P passengers and found out that comfort, convenience, safety, and reliability are the major factors influencing passengers' decision to choose P2P. Socio-economic factors such employment and income also play a major role for influencing the passengers to shift to P2P bus.

Keywords: Public Transport, Modal Shift, Asian Utility Vehicle, Point-to-Point (P2P) Bus

1. INTRODUCTION

Traffic congestion along Circumferential Road 5 (C-5) is mainly due to high volume of private cars, public utility vehicles (PUVs) predominantly Asian Utility Vehicles (AUV)¹, and trucks during peak hours. The AUVs plying along C-5 road are primarily from Rizal² and Marikina areas going to Makati City. No public utility jeepneys (PUJs) directly cater to this route as existing PUJs can only reach as far as Cubao (Quezon City) or Mandaluyong City. As such, AUV is seemingly the best option for passengers who wish to commute from Riza/Marikina areas to Makati City and vice-versa.

However, the AUVs for this particular route have its own issues. Presently, people form a long line just to ride an AUV during rush hours. On the other hand, during off-peak hours, passengers have to wait for at least an hour until the AUV is fully occupied. There were instances that queue of passengers waiting for an AUV to arrive in Makati Terminals (near RCBC and PBCOM) has stretched to almost three (3) kilometers. Inside the AUV, passengers have to fit themselves no matter how uncomfortable they are just to ensure they arrive to work on time or come home at earliest possible time. Despite these limitations, passengers still prioritize AUV for lack of better transport option along this route.

On 17 April 2018, a Point-to-Point Premium Bus Service (P2P) was introduced from SM Masinag (Antipolo City) to Greenbelt 5 (Makati City). The increasing demand for better commuting option and clamor to ease traffic congestion along C-5 Road justified the need for

¹ Including UV Express or FX

² Such as Angono, Binangonan, Cogeo, Taytay, and Antipolo City, Montalban, and San Mateo

a high-occupancy and better PUV option. The P2P is a major project of Department of Transportation (DOTr) launched last December 2015. It is similar to a traditional public utility bus (PUB) in terms of vehicle model, but P2P is much better in terms of vehicle age/model, comfort, air-condition, and auxiliary items such as Wi-Fi connection and closed-circuit television (CCTV). P2P is also more reliable than traditional PUB in terms of guaranteed seats and fixed schedule of departure and arrival. At present, there are one hundred seventy-one (171) P2Ps covering twenty-two (22) routes in Metro Manila and nearby areas. Given that P2P just started its operations along SM Masinag-Greenbelt 5 route, it is a timely opportunity to determine analyze the factors that can influence passengers to shift to this transport mode.

1.1 Research Questions

The study focuses on the group of passengers who commute primarily from Marikina City and Rizal Province to Makati City and shall attempt to answer two research questions:

1. What are the characteristics/profile of these P2P commuters?
2. What are the factors that affect them to choose P2P?

1.2 Objectives of the Study

Accordingly, the study aims to achieve two objectives:

1. To determine the profile of passengers of P2P SM Masinag and Greenbelt 5 route; and
2. To specify the underlying factors affecting these passengers to choose P2P.

1.3 Study Area

The study shall only cover the transport corridor with existing passengers commuting from SM Masinag to Greenbelt 5 as shown in Figure 1. Prior to the introduction of P2P buses, there are fifteen (15) AUV units servicing this route with the following features:

- capacity of eighteen (18) passengers
- AUV Terminals are located in SM Masinag (Antipolo City) and PBCOM in Dela Rosa (Makati City)
- schedule from SM Masinag Terminal is from 5:00 am to 2:30 pm; trip duration on the average is around two (2) hours; at most three (3) trips a day
- schedule at the Dela Rosa Terminal is from 3:00 pm to 1:00 am; trip duration is around two (2) hours and fifteen (15) minutes; at most two (2) trips a day
- estimated passenger from SM Masinag Terminal is eight hundred ten (810) passengers with peak hours at around 5:30 am – 7:00 am
- estimated demand from Dela Rosa Terminal is five hundred forty (540) with peak hours at 5:00 pm – 7:00 pm



Figure 1. Public Transport Corridor for the Masinag - Dela Rosa Route

The P2P SM Masinag-Greenbelt 5 route, on the other hand, has a fare of Php60 for one-way trip. From initially three (3) buses, there are now seven (7)³ buses servicing this route with schedules presented in Figure 2. The estimated carrying capacity for a single trip of a P2P is forty-five (45) passengers. The partner bus company for this particular route is the RRCG.



Figure 2: SM Masinag-Greenbelt 5 P2P Schedule

2. REVIEW OF RELATED LITERATURE

Related studies on choosing/shifting to a particular public transport mode usually focus on a certain group of passengers and/or specific transport mode. Those studies will determine the likelihood of passengers choosing/shifting from one transport mode to another as influenced by various socio-economic and trip factors through a stated preference (SP) or revealed

³ Started July 2018

preference (RP) survey. Several statistical techniques are also used such as binary and logit models, trend and regression analyses, and structural equation model to determine factors for modal shift.

In the study of Tangphaisankun et al (2011), instinctive factors such as personality and preferences are considered major influencers of travel intention (based on the survey) within the 3-kilometer catchment areas of the mass transit corridors in Bangkok, Thailand. The study showed that the commuters' valuable insights are relevant to future transport planning purposes. Another study conducted by Prabansak et al (2007) investigated the fundamental features and relationships of vehicle ownership, vehicle expenses and household socio-economic attributes in a mid-sized city in Thailand. Through Pearson's correlation, trend analysis, and multiple regression model, the study determined the relationships among household income, vehicle expense and vehicle ownership and other household attributes. Furthermore, the study of Yang et al (2013) found out, using structural equation model (SEM), gender-based differences were the main criteria affecting the decision of the passengers to choose a specific transport mode. The study of Upala et al (2007), on the other hand, revealed that inter-connectivity of the destination to the van service is a major factor that affects transport mode choice.

Socio-economic and trip factors such as travel time, cost, income, car ownership, gender (male), and residence location influenced the decision of students from American University of Beirut (AUB) in Lebanon to shift from private cars to public transport as presented in the study of Danaf, Abou-Zeid, and Kaysi (2013). Moreover, factors such as gender (male), possession of driver's license and regular access to a private vehicle, income (high), comfort of vehicle, flexibility of reaching multiple destinations, and quality of public transport affected decision of passengers in Penang, Malaysia to shift from private vehicles to public transport (Chee and Fernandez, 2013).

In the Philippines, several studies are also available (usually in the form of academic thesis) that focus on determining factors for a modal shift. For instance, Chua (2018), using SP survey, investigated the factors that could encourage private car and transport network vehicle service (TNVS) users to shift to a proposed Bus Rapid Transit (BRT) along Quezon Avenue (from Quezon City Memorial Circle to Manila City Hall). The study revealed the following factors for a modal shift: income, age, car ownership, frequency of use of private cars or TNVS, travel distance, and travel time.

Similarly, de Guzman and Diaz (2005) highlighted travel time, comfort, and access as major factors that influence private car users to shift to public transport. The study of Fillone, Tiglao, and Montalbo (2007), on the other hand, identified faster travel time, better comfort, and greater/wider accessibility as three major factors that could influence both private car and other public transport mode users to shift to a mass transit system. Similarly, Jimenez (1996) pointed out that improved level of service (LOS), park and ride scheme, restraint measures such as odd-even scheme, and higher parking charges were the major influential factors that would encourage private car owners to shift to then proposed MRT-3.

3. CONCEPTUAL FRAMEWORK

The study assumed that the respondents have already made a shift from their original/previous transport mode of choice, e.g., AUV, to the newly introduced P2P. Possible factors for such shift may include desire for/anticipation of better overall commuting/travel experience,

shorter waiting time, shorter travel time, reliability, comfort, safety and security, accessibility, facilities or amenities, and travel cost. Figure 3 illustrates the conceptual framework used for this study: from the original transport mode used by the passengers, the study will identify and analyze factors that influence their decision to choose P2P.



Figure 3. Conceptual Framework

Based on the review of related literature, possible factors for modal shift considered in this study include: reasonable fare, less travel expense, faster travel time, accessible, convenient, near the house, safe, shorter waiting time, reliable, and comfort.

4. ANALYTICAL FRAMEWORK

The study shall conduct an initial profiling of the passengers through secondary data. This will be validated and complemented by a revealed preference (RP) person-trip survey among existing passengers of P2P SM Masinag-Greenbelt 5 route. The socio-economic and trip characteristics gathered from secondary data and RP survey shall be presented and analyzed using regression and chi square methods to determine which factors are relevant in influencing the decision of the passengers to shift to P2P. Based on the results of the analysis, the study shall then offer its own conclusions and recommendations. Figure 4 summarizes the analytical framework of the study.

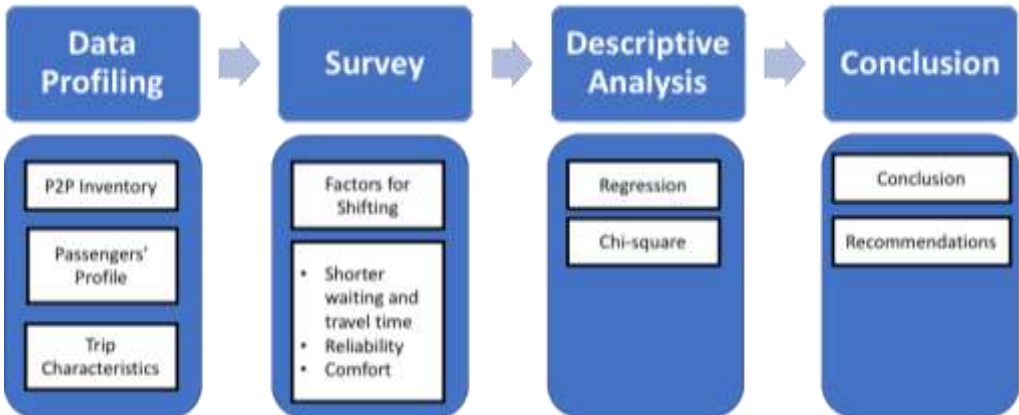


Figure 4. Analytical Framework

5. METHODOLOGY

As mentioned, the study conducted an RP survey among actual passengers of P2P SM Masinag-Greenbelt 5 route. The RP survey was conducted on 15 May 2018 with four (4) surveyors rode P2P by pair. The surveyors asked each passenger if they were willing to

participate in the survey and only those passengers who said “yes” were included. The first two trips departed at 5:50 am and 6:15 am from SM Masinag, ahead of its respective schedule that time. Upon arrival in Greenbelt 5, the surveyors proceeded with the succeeding RP surveys:

- Greenbelt 5 to SM Masinag at 8:30 am and 9:30 am
- SM Masinag to Greenbelt 5 at 11:00 am and 2:00 pm
- Greenbelt 5 to SM Masinag at 6:00 pm and 6:30 pm

A total of ninety-four (94) respondents were surveyed. However, only eighty-seven (87) or ninety-three percent (93%) of total respondents were valid because seven (7) respondents provided incomplete answers. The study used MS Excel and SPSS for cross tabulations and descriptive analysis. Furthermore, the study also run a series of logit regressions and chi-square methods to analyze the results of the survey. Initial analyses were conducted for the entire sample size of the survey. However, due to statistically insignificant results, the study decided to disaggregate the analysis between two groups of passengers depending on where they board the P2P: SM Masinag Terminal (“SM Masinag Group”) or Greenbelt 5 Terminal (“Greenbelt 5 Group”).

6. PRESENTATION AND ANALYSIS OF RESULTS

Fifty-five (55) valid respondents departed from SM Masinag Terminal while thirty-two (32) originated from Greenbelt 5 Terminal. The following sections discussed the results of the survey.

6.1 Respondents’ Profile

6.1.1 Gender

Majority of the P2P passengers from SM Masinag Terminal are female with 58.18%, while male passengers comprise 41.82%. For Greenbelt 5 Group, a similar observation can be made: 68.75% of the passengers are female while male passengers comprise 31.25%. Figure 5 below illustrates the gender distribution of the survey.

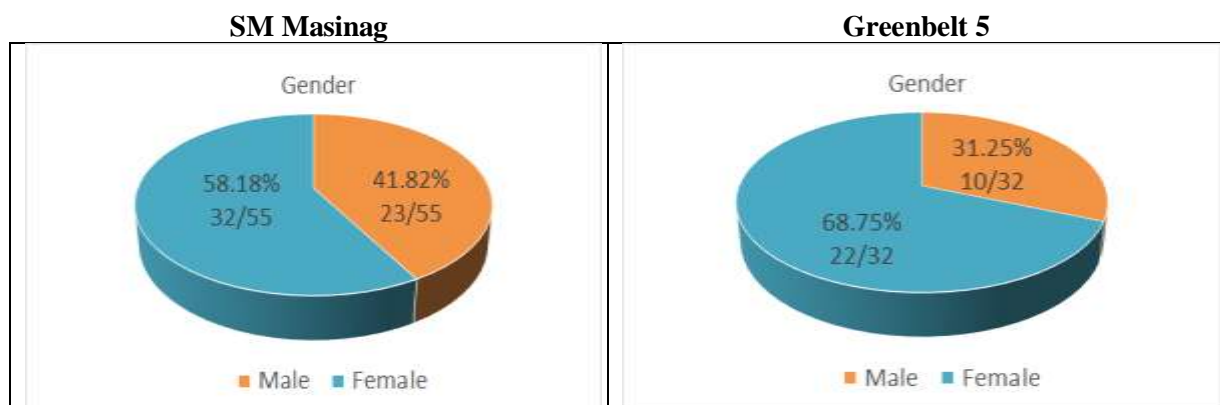


Figure 5. Gender Distribution of Respondents

6.1.2 Age

In terms of age distribution, 36.36% of total passengers from SM Masinag are within the age range of 30-39 years old while ages between 20-29 years old comprise 30.91%. These two age groups alone accounted for 67% of the entire respondents from SM Masinag. Passengers

from Greenbelt 5, on the other hand, are mostly (53.13%) from the age group of 20-29 years old. Interestingly, no respondents are within the age groups of 15 – 19, 50 – 59, and 60 & above. This indicates that most of the passengers riding this P2P route belong to the working/professional group. Figure 6 summarizes the age distribution of the survey.

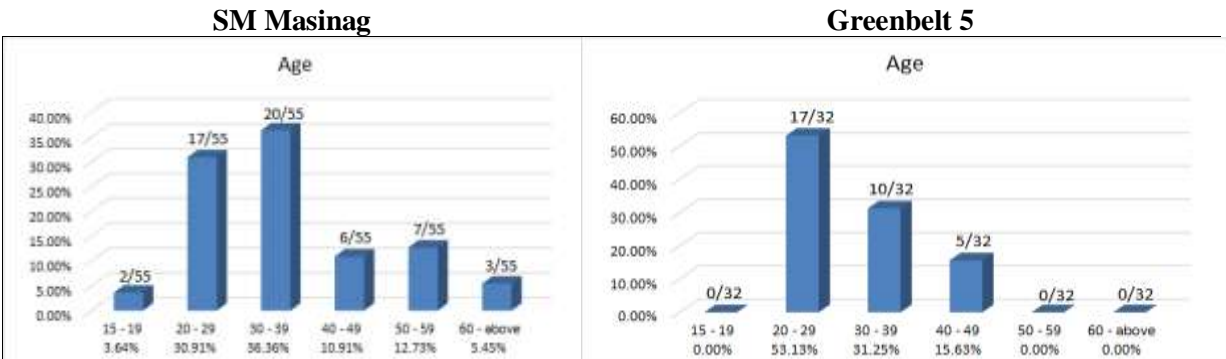


Figure 6. Age Distribution of Respondents

6.1.3 Home Address

Passengers who ride P2P at SM Masingag Terminal reside primarily in Antipolo City with 85.45% of the total respondents. The rest of passengers reside in Cainta (12.73%) or Marikina City (1.82%). Likewise, most of the passengers who board P2P at Greenbelt 5 Terminal reside in Antipolo City (81.25%) while the rest live in Marikina City (12.50%), Cainta (3.13%), and Manila City (3.13%). Figure 7 illustrates the distribution of home address of the survey respondents.

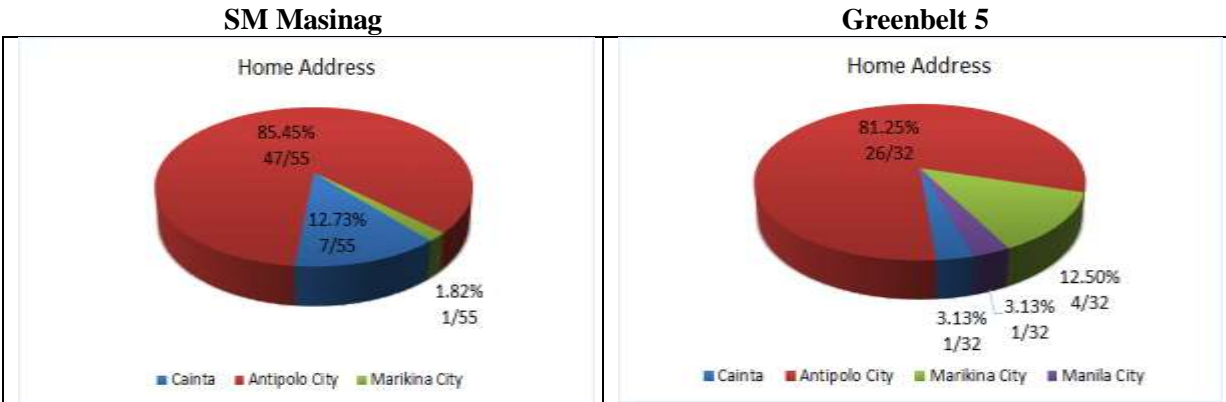


Figure 7. Home Address Distribution of Respondents

6.1.4 Employment

In terms of employment, as illustrated in Figure 8, most of the passengers who board P2P either at SM Masingag or Greenbelt 5 Terminal are regular employees. For those coming from SM Masingag, (74.55%) are regular employees while 87.50% of those departing from Greenbelt have regular jobs. This result is consistent with the age distribution of the respondents.

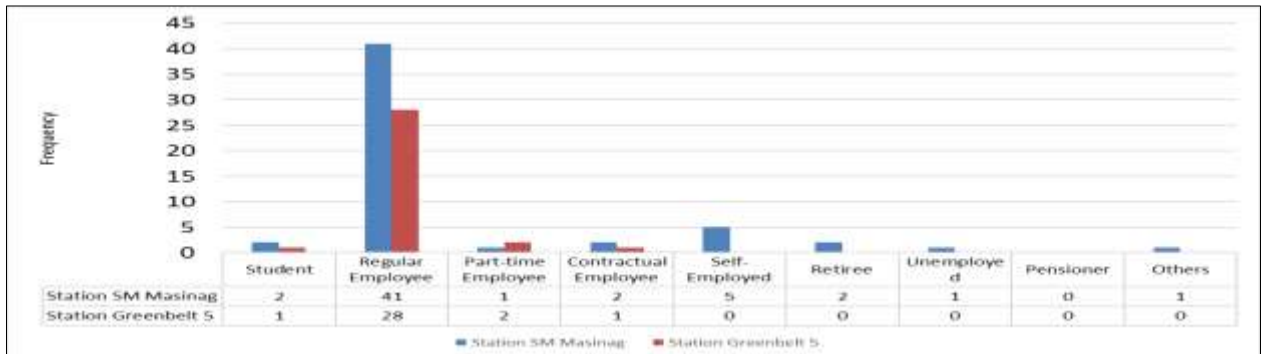


Figure 8. Employment Status of Respondents

6.1.5 Monthly Income

Since most of the respondents from either group are regular employees, it is expected that they will also have modest income. As shown in Figure 9, 36.36% respondents from SM Masing Group have a monthly income of Php30,000-Php50,000 while 37.50% of those from Greenbelt 5 Group have a monthly income of Php15,001-Php30,000. A good number of respondents (29.09% for SM Masing and 25.00% for Greenbelt 5 passengers) has income of Php50,000 and above. The income groups of the respondents suggest that P2P is considered a viable transport mode that caters to affluent passengers.



Figure 9. Monthly Income of Respondents

6.1.6 Number of Dependents

Majority of the passengers from either group have no dependent. As illustrated in Figure 10, 50.91% of passengers from SM Masing and 56.25% from Greenbelt 5 do not have dependents when the survey was conducted.

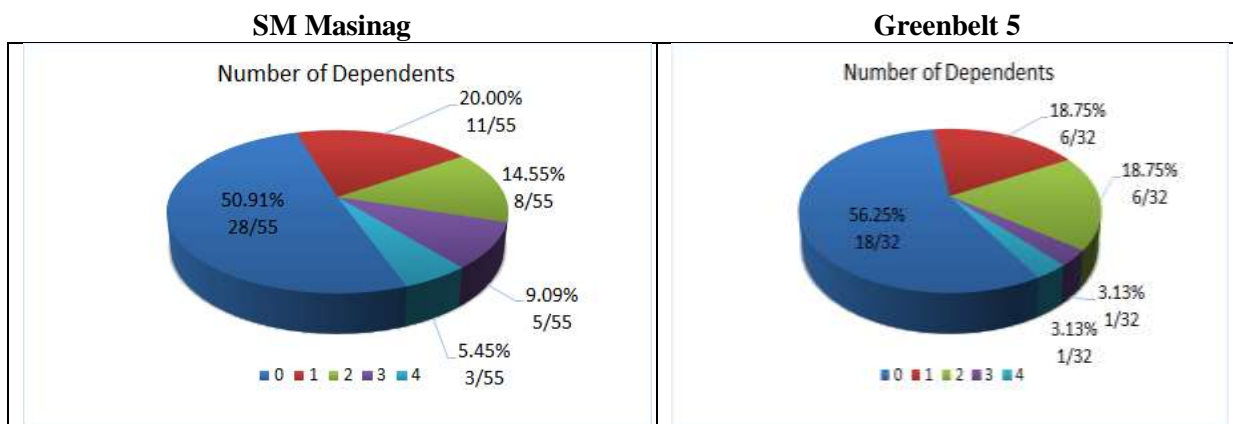


Figure 10. Number of Dependents of Respondents

6.1.7 Car Ownership

For SM Masinag Group, 54.55% of the respondents revealed they own a car while 45.45% of the passengers from Greenbelt 5 Group are car-owners as well. This suggests that car owners are a major market for P2P. They are willing to substitute driving their own cars for P2P, particularly when commuting from home to work and vice-versa. Figure 11 provides the details for car ownership distribution of the respondents.

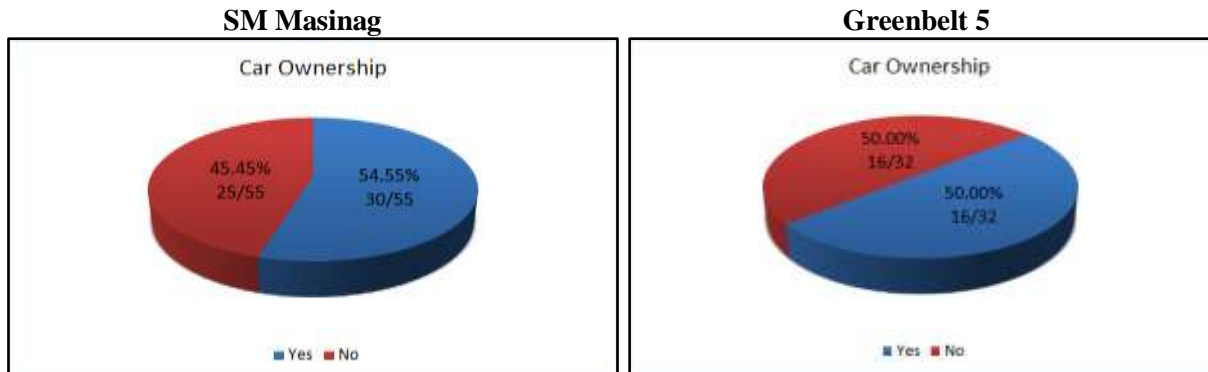


Figure 11. Car Ownership of Respondents

6.2 Trip Characteristics

6.2.1 Origin and Destination

For those boarding at SM Masinag Terminal, 78.18% of the respondents originated from Antipolo City while 81.25% of the respondents departing from Greenbelt 5 Terminal originated from Makati City, where they usually work. This further shows that P2P for this route caters for employees who mainly reside from Antipolo City (Rizal) but work in Makati City. This observation is validated by both Figure 12 and Figure 13.

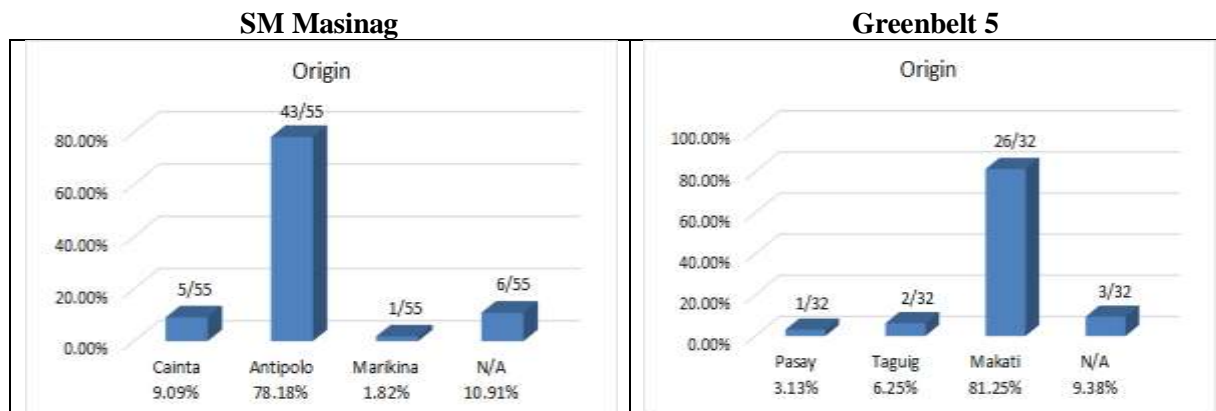


Figure 12. Trip Origin of Respondents

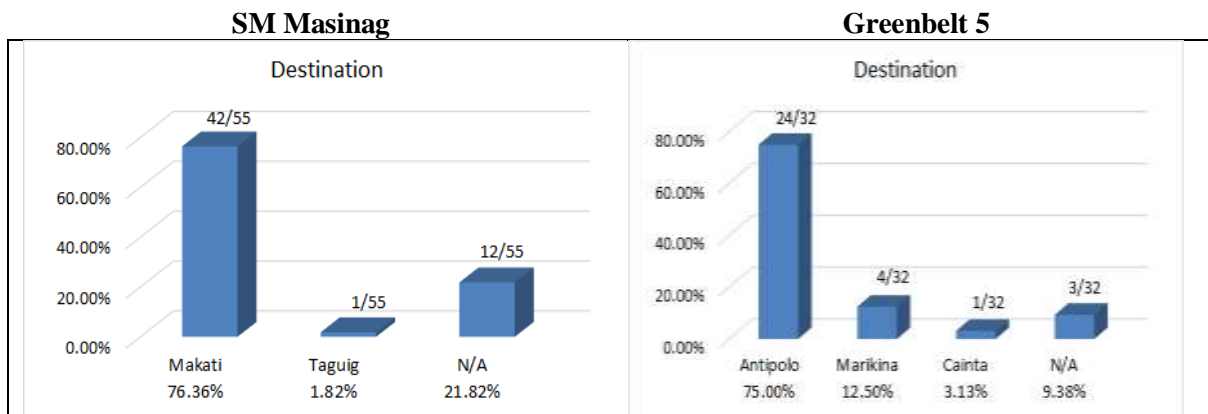


Figure 13. Trip Destination of Respondents

6.2.2 Trip Purpose

As expected, 92.73% of respondents from SM Masinag indicate that the purpose of their trip is work. Whereas, 87.50% of respondents from Greenbelt 5 Terminal cite “home” as main purpose of their trip. However, some Greenbelt 5 Group respondents shared they do not take P2P in the morning because it departs a bit late relative to their office hours. Likewise, there were also passengers who are not able to ride P2P at night due to a mismatch in schedule, i.e., P2P schedule either too early or too late for their work schedules.

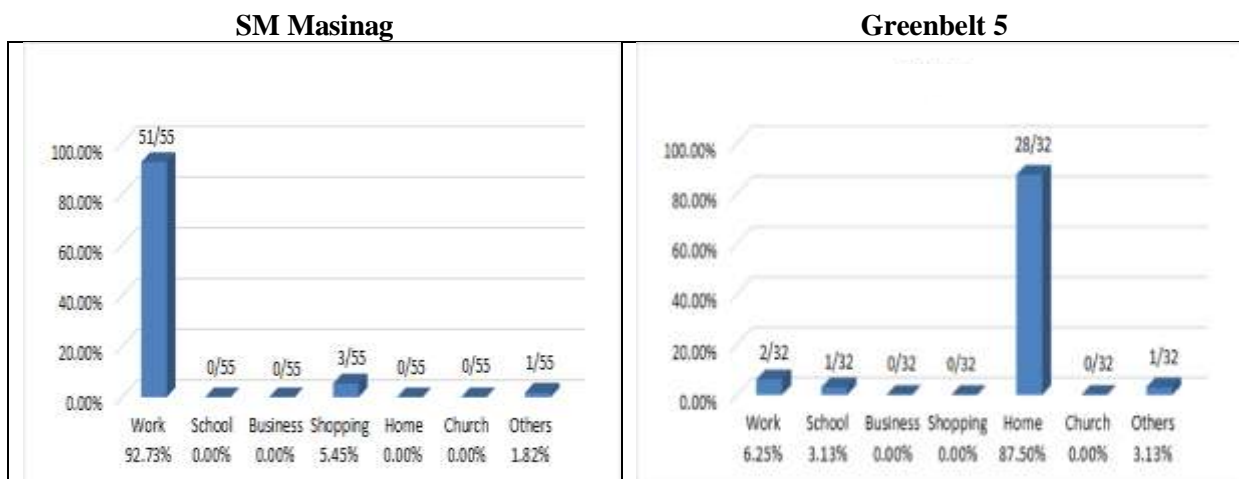


Figure 14. Trip Purpose of Respondents

6.2.3 Trip Frequency

Similarly, most of the passengers from either SM Masinag Group or Greenbelt 5 Group ride P2P daily or two to five times a week, which further indicates that they use this transport mode when they go to work. As illustrated in Figure 15, for SM Masinag group, 41.28% and 36.36% of the respondents use P2P daily and 2-5 times a week respectively. In the case of Greenbelt 5 group, 53.31% and 34.48% use P2P daily and 2-5 times a week respectively.

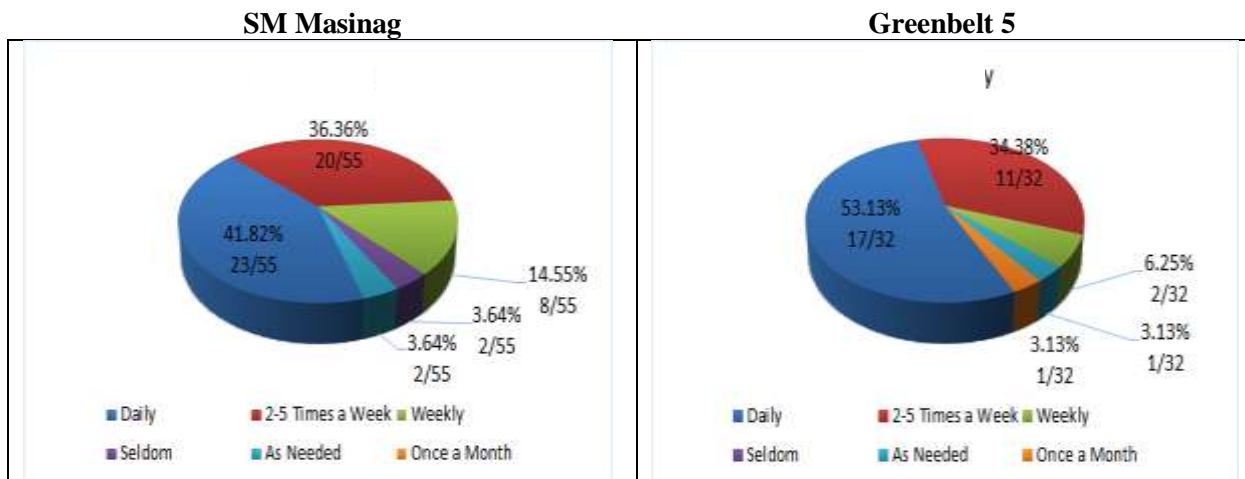


Figure 15. Trip Frequency of Respondents

6.2.4 Time

The first trip from SM Masinag and last trip from Greenbelt 5 are the most popular schedules of P2P among the passengers surveyed. For SM Masinag Terminal, 64.52% of the passengers ride the early morning (5 am to 7 am) schedule while 50% of the passengers from Greenbelt 5 Terminal ride the evening (6 pm onwards) schedule. Figure 16 provides the details of time/schedule distribution of the respondents.

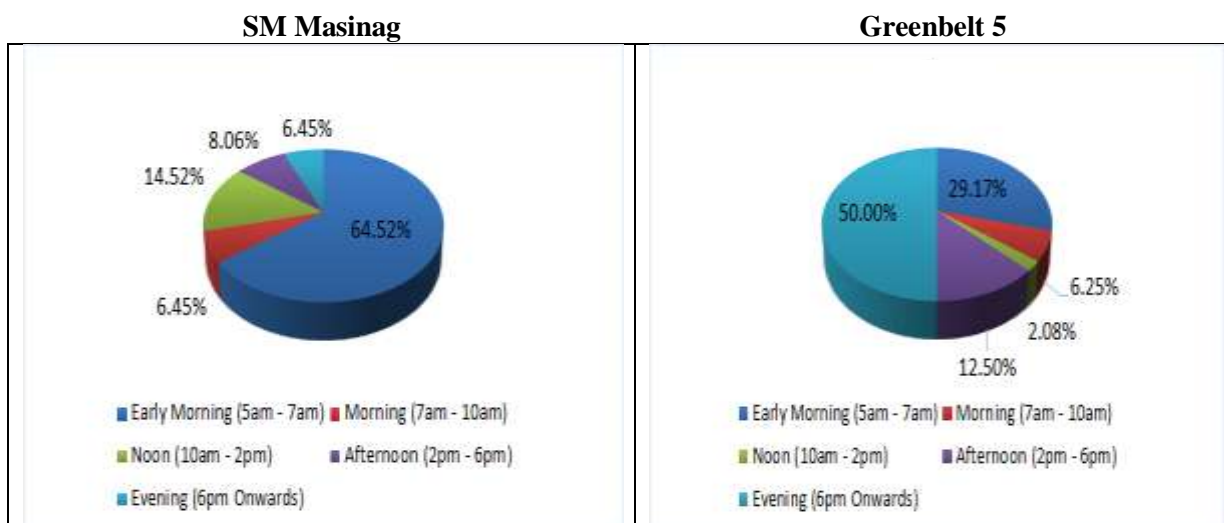


Figure 16. Trip Time of Respondents

6.2.5 Mode of Transport to P2P Terminal/after P2P Terminal

As previously mentioned, more than half of passengers from SM Masinag group own a private car. This supports the finding that 26.76% of passengers from SM Masinag use their car to reach the P2P Terminal. On one hand, this indicates that the SM Masinag Terminal is relatively far from the houses of the passengers. On the other hand, this situation somehow mimics a “park and ride” system wherein passengers use their private cars to go to a mass transit terminal. The cars will be parked (or will be brought home by another family member or driver) and will no longer ply the road leading to the work destination of the passenger. Also, 15.49% and 12.68% of the respondents use tricycle or walk respectively, which further indicate that the distance of SM Masinag Terminal from the houses of the passengers is a bit far.

In the case of passengers from Greenbelt 5, 52.63% of the respondents just walk to get to the P2P terminal. This indicates that a) work offices of respondents are near the terminal and/or b) it is more encouraging to walk in Makati City given better sidewalks and availability of more mall establishments.

Similar observations can be made for the transport mode after the P2P terminal. For those coming from SM Masinag, they usually walk to reach their destination (i.e., office) after reaching the Greenbelt 5 P2P Terminal. On the other hand, for those coming from Greenbelt 5, they either ride a tricycle, jeepney, or walk after to get to their destination (i.e., house) upon reaching the SM Masinag Terminal. Figure 17 and Figure 18 illustrate the mode of transport of the passengers going to and leaving the P2P Terminal in SM Masinag and Greenbelt 5.

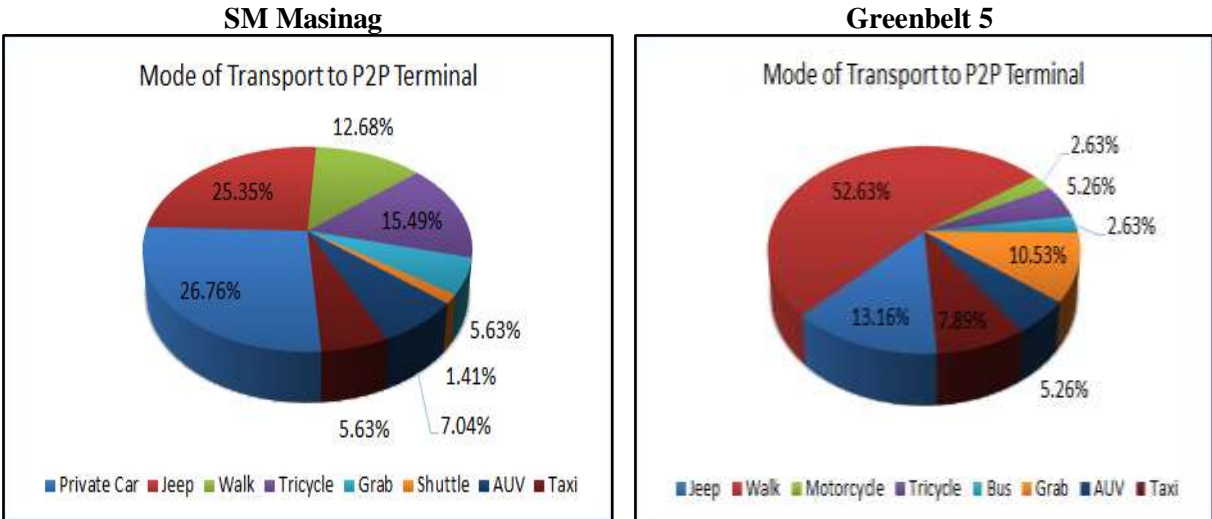


Figure 17. Mode of Transport Going to P2P Terminal

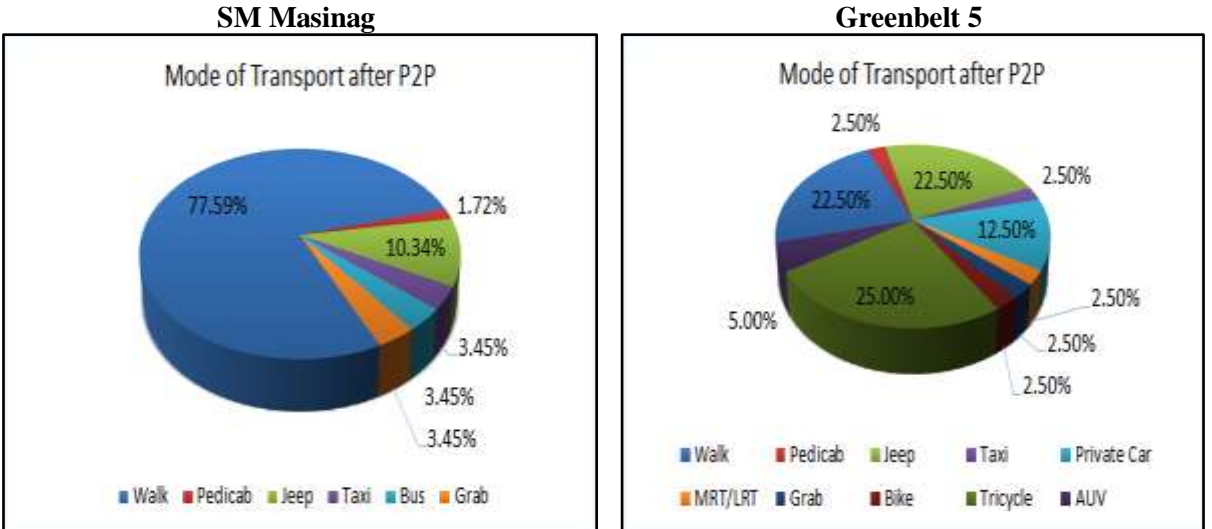


Figure 18. Mode of Transport After Taking P2P

6.2.6 Travel Time & Travel Cost

For passengers traveling from Antipolo City to Makati City during morning rush hour, 80.00% of them revealed a total travel time of 1 to 2 hours. For passengers coming from Makati City going to Antipolo City, 56.25% said they have a travel time of 2-3 hours while 40.63% have a travel time of 1-2 hours. Based on the experience of the surveyors, travel time

from SM Masing to Greenbelt 5 is between 1 hour and 1 hour & 15 minutes. Trip from Greenbelt 5 to SM Masing, on the other hand, is roughly 2 hours & 15 minutes.

For travel cost, both group of passengers are consistent with their total travel cost. For passengers coming from SM Masing, 78.18% said their total travel cost is Php51-100 whereas for passengers coming Greenbelt 5, 71.88% have a total travel cost of Php51-100. Figure 19 and Figure 20 provide results for travel time and cost of the passengers.

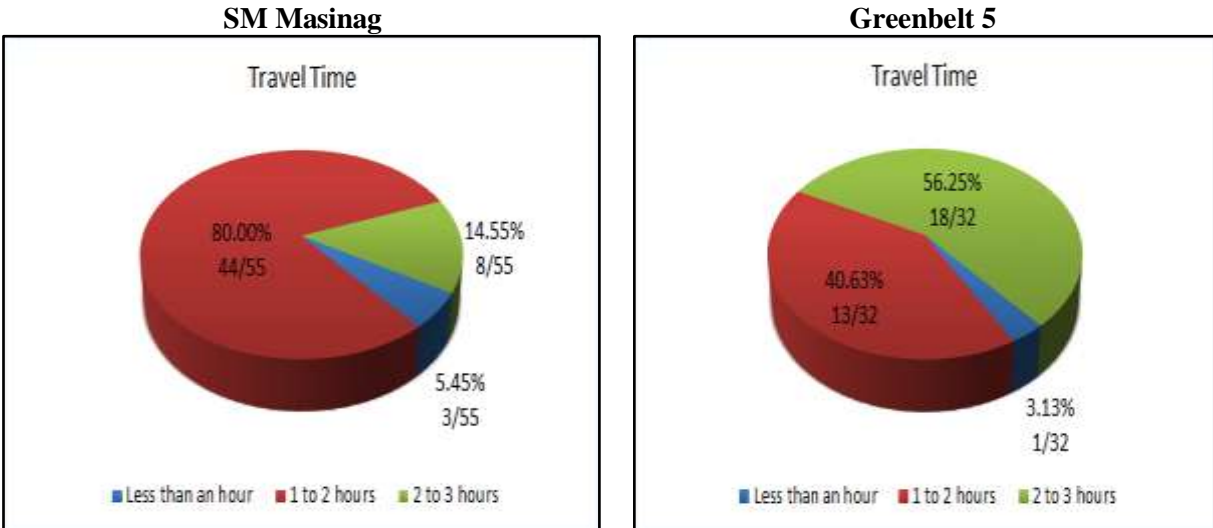


Figure 19. Travel Time of Respondents from SM Masing and Greenbelt 5

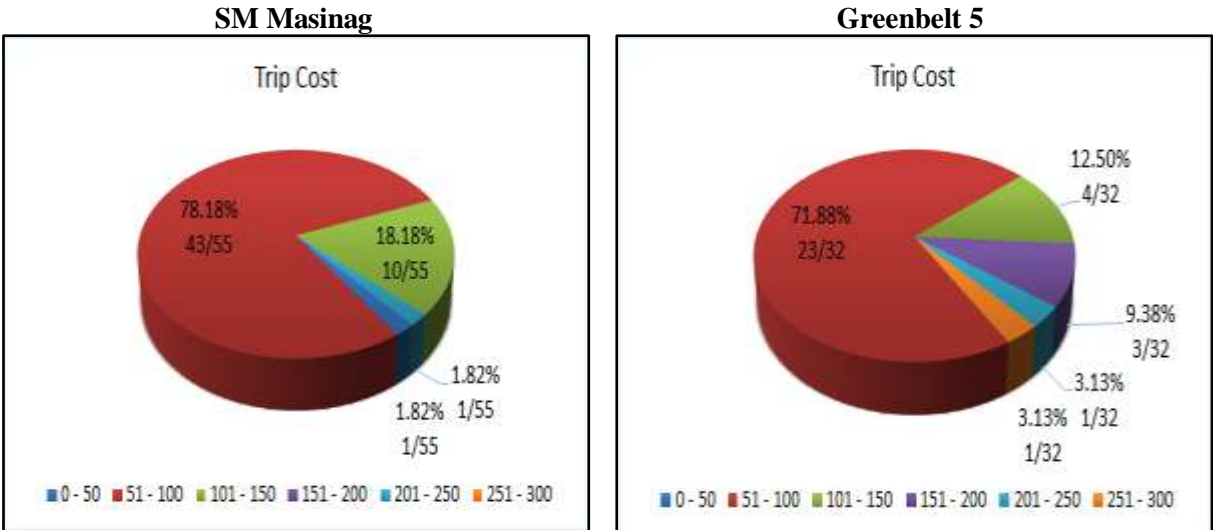


Figure 20. Trip Cost of Respondents from SM Masing and Greenbelt 5

6.2.7 Factors Affecting Commuter’s Choice of Transport Mode

The survey also asked the passengers to rank different factors that influence their decision in choosing a transport mode, or in this case P2P. Table 1 presents various factors and its corresponding rank based on the answers of survey respondents. Note that for the ranking, 1 corresponds to the most important while 5 corresponds to the least important. While there are slight variations on overall ranking (i.e., mean score) between the two groups, the order of ranking of factors remains the same.

It turned out most of the passengers from both groups considered comfort as the main factor for choosing P2P with a mean score of 2.75 for SM Masing and 2.47 for Greenbelt 5. Aside from comfort, among the top factors that encourage passengers to choose P2P include convenience, reliability, and safety. On the other hand, nearness of P2P Terminal to their respective house is the least important factor. This explains that despite taking additional mode of transport (e.g., jeepney, tricycle, and walking going to the P2P Terminal and from the terminal to their respective destination) passengers are still willing to ride P2P.

Table 1 Respondents from SM Masing - Reasons for Choosing Transport Mode Choice

Factors	SM Masing		Greenbelt 5	
	Ranking	Mean	Ranking	Mean
Comfortable	1	2.75	1	2.47
Convenient	2	4.22	2	4.19
Reliable	3	5.00	3	5.09
Safe	4	5.09	4	5.56
Accessible	5	5.45	5	5.81
Less Travel Expense	6.5	6.18	6	5.91
Faster Travel Time	6.5	6.18	7	6.03
Reasonable Fare	8	6.44	8	6.28
Shorter Waiting Time	9	6.82	9	6.75
Near House	10	6.84	10	6.91

6.3 Trip Characteristics Before and During P2P Bus

6.3.1 Substitute for P2P Bus

The study also looks into other alternative modes of transport if the respondents cannot take the P2P regardless of their origin. The top alternative transport modes are AUV, private car, and Taxi/Grab/Uber. When the passengers are further disaggregated to SM Masing and Greenbelt 5 Terminals, 89.09% of the respondents from SM Masing said they are used to take AUV going to Makati City while 65.63% of the respondents from Greenbelt 5 also said they are used to take AUV if P2P is not available. This validates that AUV remains the alternative mode of transport to P2P bus for the Antipolo City (Rizal)-Makati City route.

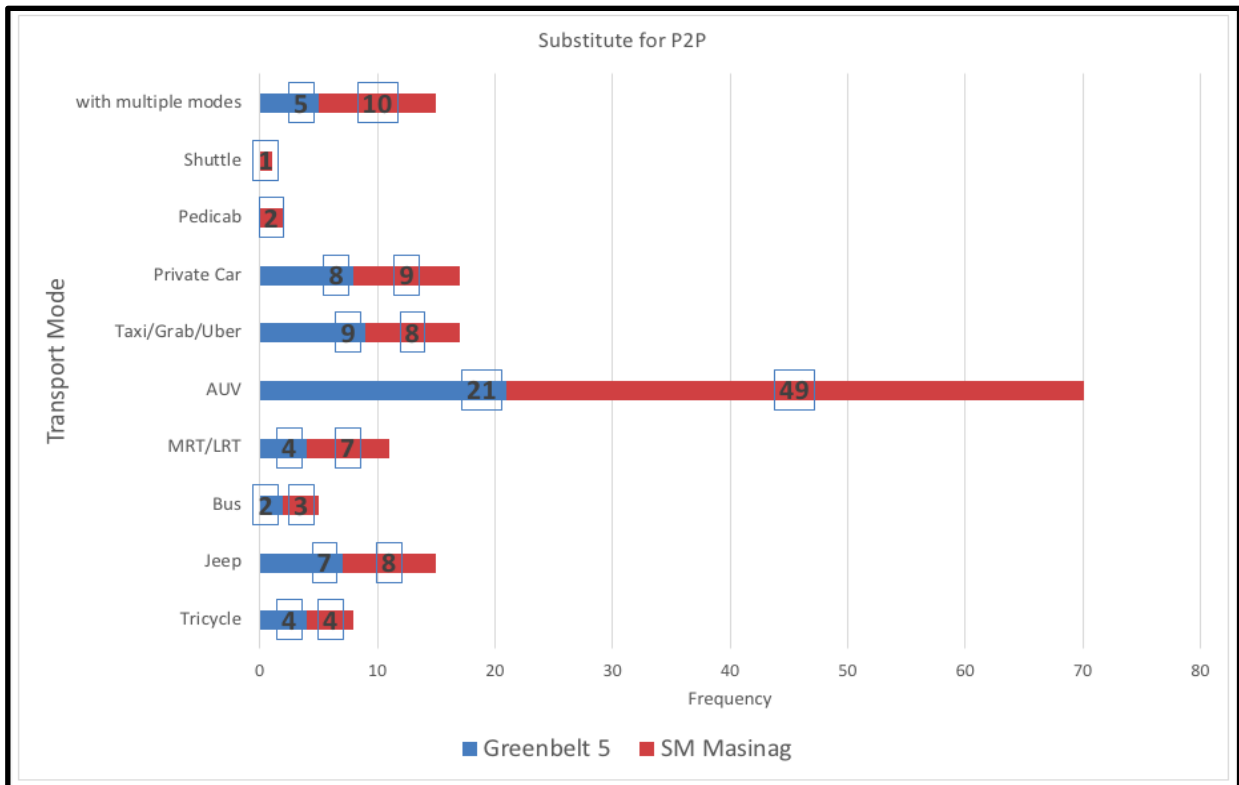


Figure 21. Respondents Substitute for P2P

6.3.2 Change in Travel Time

Despite the modal shift to P2P, 42.18% of the respondents departing from SM Masingag revealed they did not experience a reduction in travel time. Only 29.09% of the respondents experienced a reduction of sixty (60) minutes in travel time when they started using P2P.

On the other hand, 50.00% of the passengers departing from Greenbelt 5 did not experience a reduction in travel time. Only 18.75% of the passengers claimed that there was a one-hour reduction in travel time using P2P bus from Makati City to Antipolo City.

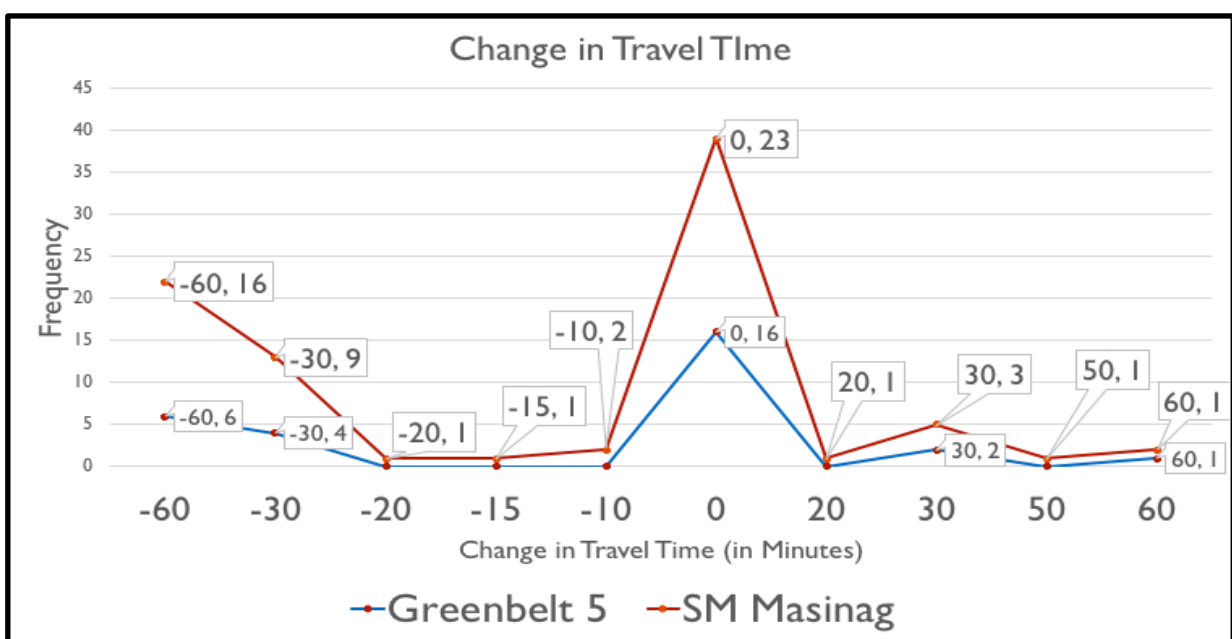


Figure 22. Respondents' Change in Travel Time

6.3.3 Change in Travel Cost

For passengers coming from SM Masinag, 56.36% recorded an increase of Php4-Php50 in their fare after using P2P. Interestingly, for passengers coming from Greenbelt 5, 50% shared they enjoyed a reduction of at least Php2 in their total travel cost after using P2P.

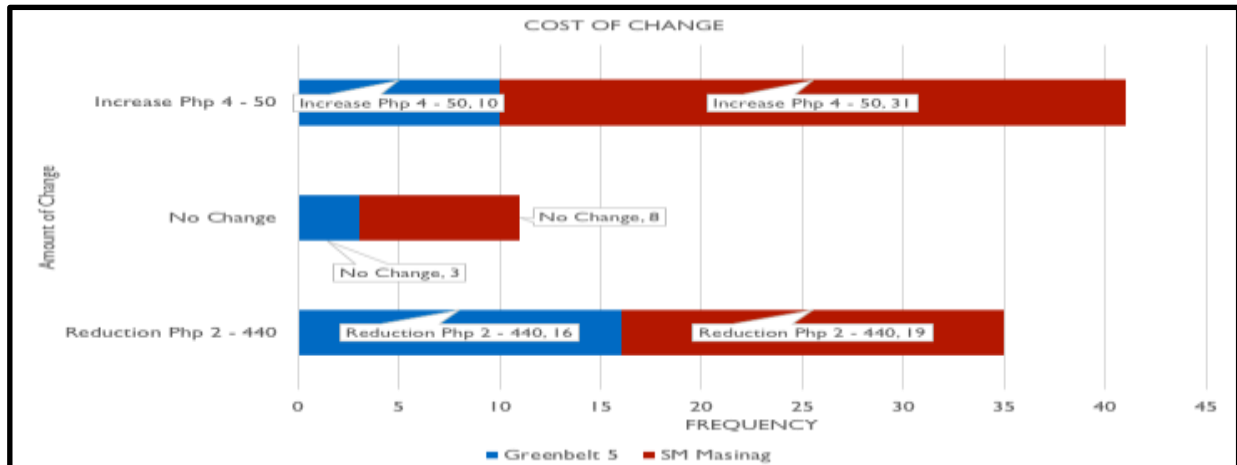


Figure 23. Respondents' Change of Travel Cost when Using P2P

6.4 Chi-square test of independence

The study run a series of logit regressions to further determine which factors are significant in influencing the decision of passengers to choose the P2P. The results, however, were not statistically significant mainly because of the small sample size. The study used a chi-square test of independence instead to determine if there are significant relationships among the categorical variables included in the survey. After running a series of chi-square tests, only the time variable turned out to be statistically significant in influencing the decision of passengers to ride P2P bus more frequently. Figure 24 shows that if travel time in alternative mode of transportation is at 2-3 hours, passenger is 33.7% more likely to frequent using P2P than those with only 1-2 hours travel time in alternative mode of transportation. In other words, if passengers perceive that they will save travel time in using P2P over alternative transport modes, they will choose P2P.

regress frequent i.sub_traveldur diff_travelcost

Source	SS	df	MS	Number of obs	
Model	4.70679087	3	1.56893029	87	F(3, 83) 2.92
Residual	44.6725195	83	0.538223126		Prob > F 0.0391
Total	49.3793103	86	0.574178027		R-squared 0.0953
					Adj R-squared 0.0626
					Root MSE 0.73364

	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
sub_traveldur						
2 to 3 hours	0.3367157	0.1611012	2.09	0.040	0.0162918	0.6571395
> 3 hours	0.0990712	0.5410009	0.18	0.855	-0.9769579	1.1751000
diff_travelcost	0.0019313	0.0009830	1.96	0.053	-0.0000239	0.0038866
_cons	3.1423470	0.1259082	24.96	0.000	2.8919200	3.3927730

Figure 24. Chi-square Test Results

7. CONCLUSIONS AND RECOMMENDATIONS

Based on the discussions above, the study concludes and recommends the following:

- (1) Employment and Income are major socio-economic factors for choosing P2P. Based on results of the RP survey, most of the passengers using P2P from Antipolo City to Makati City and vice-versa have regular jobs with monthly income ranging from Php15,000 to Php50,000. Private car owners are likewise attracted to riding P2P with at least 50% of the respondents are also car owners. In this regard, DOTr and RRCG should give higher priority to these factors when considering additional areas to be served by P2P.
- (2) The current location of P2P Terminals covered in this study, i.e., SM Masinag and Greenbelt 5, require the passengers to take additional mode of transport such as jeepney, tricycle, and walking in order to reach the terminal and from the terminal to either their house or office. In this regard, there is a need for DOTr and RRCG to revisit the location of the terminal in order to further enhance overall commuting experience of the passengers.
- (3) Major factors that influence passengers to choose P2P over other public transport modes servicing the Antipolo City-Makati City route are **comfort, convenience, safety, and reliability**.
 - According to several respondents, especially during peak hours, AUVs are fully occupied to a point where passengers feel they are packed like “sardines” inside the vehicle without appropriate leg room or seating space. Due to lack of ample space allocated for each commuter, among the dreadful situations experienced by the respondent passengers were: (1) passenger sleeping on another fellow passenger’s shoulder while in transit; (2) passenger snoring loudly while sleeping in transit; (3) passengers hoarding the air-condition ventilation to themselves; (4) passengers are often disturbed by fellow passengers yelling to the driver for their change or passengers at the back giving their fare to the driver; (5) fellow passengers are disturbed by some passengers busy eating inside the vehicle; (6) passengers felt that it is not safe for a driver to receive fares and give changes while driving; and (7) some female passengers shared they experienced feeling harassed inside the “packed” AUV.
 - With P2P, private car owners do not have to drive their cars from home to work, especially during rush hours when there is traffic congestion. They do not also need to worry looking and paying for a parking space. Instead of spending their time driving the car, passengers of P2P can be more productive. Given the ample seating space inside P2P, passengers can either read books/documents or simply just rest during transit instead of driving. Passengers also feel more relaxed and safe when they reach their destination.
 - Both previous car and AUV users opined that they can save more time, because they do not have to wake up very early, in riding P2P given availability of units, guaranteed seats, and fixed schedules. However, DOTr and RRCG can also review the current time of departure/arrival of P2P to further align it with work schedule of the passengers.

Given the preceding items discussed, the study further recommends the following:

- More P2Ps should be deployed during the peak hours to cater to increasing passenger demand;
- Strict measures to ensure compliance to fixed schedules must be in place to keep the reliability advantage of P2P over alternative public transport modes;
- DOTr should continue promoting P2P by expanding the number of routes to improve the overall commuting experience of passengers;
- DOTr can also take advantage of P2P as a form of mass transit that can ease traffic congestion in selected routes. This is based on the observations that private car users are encouraged to ride P2P. If this trend continues, there will be fewer vehicles in the road, which is a major factor in easing traffic congestion.
- The methodology of this study can be replicated to other public transport modes to provide an understanding on the commuters' travel experience and their preference.
- A follow-up survey or study related to the factors of modal shift maybe conducted after six (6) months to see if there are changes in the results considering this study was done a month after the implementation of P2P SM Masinag-Greenbelt 5 route.

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