The Analysis of Socio-Economic Characteristics of Public Transport Users in Makassar, Indonesia

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Abstract- This study aims to determine the socio-economic characteristics of public transport users in the city of Makassar, Indonesia. The method used was a survey method by distributing questionnaires to respondents. The samples used were BRT (Bus Rapid Transit) passengers from 2, 3 and 4 corridors, as well as passengers of pete-pete (a public transportation to travel around the city of Makassar) of the A, D and C routes in Makassar City. Data obtained from the survey were processed. The factors reviewed include; gender, age, level of education, occupation, strata and family dependents, vehicle ownership, origin location and destination of trips, frequency using public transportation, mode used, travel distance and travel time, travel cost and the income of public transport users. Regarding to these factors, socio-economic characteristics of public transport users were found.

Index Terms- characteristics, socio-economic, public transportation.

I. INTRODUCTION

Transportation is the most important element for community activities, the important role of transportation is for everyday movements of people and goods, the role of it can be seenfrom various aspects including; economic, social, political, security and defense of the environment.

Transportation is an integral part of a society function, it shows a very close relationship with lifestyle, the advances of transportations changed the way of life and the way society is regulated, thus transportation affects human civilization, and is also a major component of society (Morlok, 1991)

Other indicators that showed the importance of transportation in various activities measured by the percentage of consumption of certain resources, nationally were: "12% of workers, 75% of all rubber products, 53% of all oil products, 24% of all steel products, 27% of all cement products and 67% of all tin products" (Transportation Association of America, 1974). Meanwhile, the need of transportation services can only be described qualitatively and has different characteristics as the function of time, destination, frequency of travel, type of goods transported and others. The need of movement is derivative, movement occurs because of the process of fulfilling the needs, the fulfillment of needs must be done every day; for work, education, health, and sports", therefore transportation facilities and infrastructure are needed to support the fulfillment of these needs (Tamin, 2000). Transportation is the most important element for community activities, the important role of transportation is for everyday movements of people and goods, the role of it can be seenfrom various aspects including; economic, social, political, security and defense of the environment.

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The study results of "Urban Transport Short-Term / JUTSI Implementation Program (1996) in the City of Jakarta", show that, "the composition of travel destinations was dominated by commuters that was 44%; 16% of people went for work,12% for school,8% for shopping,5% for business,12% for personal affair and 3% for others. The composition of transportation modes used for travel in DKI, was dominated by bus that was 49%,private transports 21%, motorbikes 22%, and trains 8%. The average travel time used by each group was 44.8 minutes for working, 28.8 minutes for school, 22.6 minutes for shopping, 39.5 minutes for business, 26.8 minutes for personal affair, 31.7 minutes for commuter, and 26.8 minutes for others.

Someone must spend transport costs for the use of any public transportations. These costs can vary, it can be either direct costs or indirect costs, either fixed costs or non-fixed cost, it really depends on the mode of transportation used; public transportation (bus, train, etc.) or private transportation.The use of private transportations can vary; using non-motorized vehicles (bicycles, walking) or motorized vehicles (cars, motorbikes). Perhatian peneliti terhadap public transportasi cukup tinggi terutama yang berhubungan dengan Special attention is paid on the “two-wheeler cities” in Asia (Koizumi et al. 2013). A question arises, how much transport costs incurred by the community (family) in traveling. Based on the result of the study "Urban transport Short-Term / JUTSI Implementaton Program (1996) in the City of Jakarta" shows that, the comparison between transport costs incurred by the community and their income was 14.33% - 37.7% (equivalent to 1: 2).

The costs incurred by the community in traveling are different, these costs highly depen on the characteristics of the people who will travel. Many components (variables) that affect public transport users in traveling, such as gender, age, education level, type of work, family structure, dependents in the family, vehicle ownership, origin and destination of travel, type of mode used, travel distance, travel time, family income, and travel costs.

The content of transportation components accounted for around 16% of commodity prices (Koesno, 1996). Since the role of transportation is very significant, thus the transportation system must be designed as well as possible so that it can produce a transportation design that provides maximum benefits so that the community can enjoy a sustainable transportation system, such as environmentally friendly transportation, low cost or affordable and also efficient, thus the generated impact can be minimized, including the social impact (Brotodewo, 2010). According to the results of this study, the authors intend to discover the characteristics of public transport users in the city of Makassar.

II. RESEARCH METHOD

The study was intended to find the socio-economic characteristics of the public transport users. The study was conducted by using technique of interview in public transportations; both tothe users of pete-pete (public transportation to travel around the city of Makassar) and BRT (Bus Rapid Transit).

Prior tocollecting the data, questionnaire was made and adjusted to the purpose of this study. The questionnaire was made based on variables that provided an overview of the characteristics of public transport users.

The data collected was grouped and labeled, then described in the form of diagrams so as to facilitate the data processing. The processed data was then validated in order to see whether the data corresponded to the data needed in this study or not. The noncorresponding data were not used in the analysis, while the corresponding data were analyzed, further discussion were carried out so that conclusions and recommendations could be obtained.

A case study was conducted in the city of Makassar as the capital city of South Sulawesi Province, Makassar City was chosen as the study location since Makassar City is the gateway of eastern region of Indonesia, it is also known as a trading city, Industrial city, education city, services city, and tourism city.

This study used random sampling method. The data was obtained by conducting interviews based on the questionnaire which had been prepared for the passengers (users) of public transportation; both pete-pete (public transportation to travel around the city of Makassar) and BRT (Bus Rapid Transits).

Data collection was conducted in August until October 2017, starting from collecting preliminary data of the averageof total number of both BRT and pete-pete.The preliminary data collection was intended to determine the size of the population by doing a measurement,since the existing secondary datamight not be able to describe the real terms of the existing population. Based on the preliminary survey, the average number of passengers for each route of pete-pete and the corridor of BRT was as follows:

It's the foremost preliminary step for proceeding with any research work writing. While doing this go through a complete thought process of your Journal subject and research for it's viability by following means:

Table I: The total number of samples needed

Transportation types	Route/ corridor	Passanger/ day	The operating vehicle	The number of population
Pete-pete	A	40	165	6.600
	D	60	809	40.450
	C	60	379	9.104
BRT	2	135	8	1.104
	3	122	10	1.224
	4	153	10	1.530
Total number of sample				60.012

After the number of population was obtained, the determination of the number of samples was calculated using the Slovin formula (Sugiyono; 2006)

$$n = \frac{N}{1 + Ne^2}$$

Description: n = number of samples
N = number of population
e = error rate, taken at 5% (0.05)

Table II: Number of samples needed

Route/ corridor	Number of population (N)	Number of Sample (n)	Rounded up to(n)	Total (n)
A	6,600	377.14	378	1159
D	40,450	396.08	397	
C	9,180	383.30	384	
2	1,104	293.62	297	914
3	1,220	301.23	302	
4	1,530	317.09	318	
Total				2.073

The data collected in this study consisted of primary data and secondary data.
Primary data were obtained from the interviews of surveyors that was conducted directly with public transport users of a number of public transport passenger; both the passangers ofpete-pete (public transportation to travel around the city of Makassar) and BRT (Bus Rapid Transits) who were randomly selected.These data were recorded in a pre-prepared questionnaire, the data include: Name, age, gender, home address, type of work, level of education, occupation, income per month, position and status in the family, the number of dependents in the family, ownership of vehicles, origin and destination of travel, public transportation that is frequently used. How many times theyuse public transportation in a week, How many families using public transportation, How much estimation oftravel distance, How long the estimated time needed for travelling, How much is the estimated cost of expenses,also how many type and number of vehicles owned.
The data was collected from the survey results, then they were grouped into several categories and labeled so that it facilitated the analysis.
Secondary data was obtained from various related literature thatsupported this research. These data include; the number of population, population growth rate, population density, economic growth, administrative map, the total number and length of routes for pete-pete and corridors of BRT, length of roads and their conditions, the total number of vehicle ownership, area, activity system, and the applicable fares of public transportation.
Analysis of the data used in this study is generally divided into three, namely descriptive statistical analysis and qualitative descriptive analysis. Descriptive statistical analysis is intended to provide an overview of the characteristics of respondents in form of tables and graphs so that they are easier to understand.

III. RESULT AND DISCUSSION

Based on the survey results, it was found that thepublic transportation passengers of both pete-pete and BRT in Makassar as follows. Makassar as the provincial capital of South Sulawesi, including one of the metropolitan cities in Indonesia, this city is the gateway to eastern region of Indonesia, continues to experience rapid development, this can be seen from the increasing activity and mobility of the community. Regarding to this increasing activity and mobility, the government should prepare all facilities and infrastructure, thus Makassar can be functioned as an ideal city for its residents.
One thing that should be a concern to the government is the preparation of transportation facilities and infrastructure, especifically the facilities and infrastructure of Public Transportation. Recently, public transportation that serves the activities and mobility inthe city of Makassar is very limited, the public transportations were pete-pete (public transportation to travel around the city of Makassar) and BRT (Bus Rapid Transits), on-line transportations, ojek (motorcycle taxi), motorized pedicab and also pedicab.
In this study the author examined the passengers who used (public transportation to travel around the city of Makassar) and BRT (Bus Rapid Transits) in their daily activities, to illustrate these conditions, the following are the characteristics of pete-pete and BRT users which are summarized in the form of tables and graphs:

Table III: Gender of the Passengers

Gender	Total of Passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Man	695	220	915	76	19	47.5
Woman	219	939	1158	24	81	52.5
Total	914	1159	2.073	100	100	100

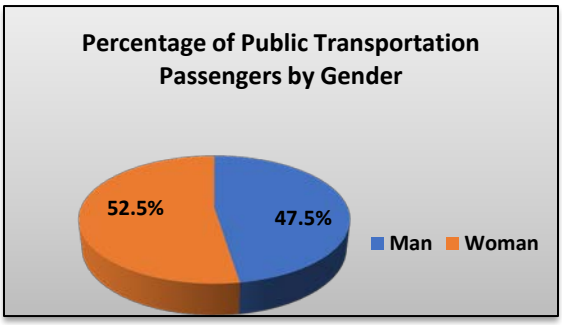

Figure 1: Percentage of Public Transportation Passengers by Gender

Based on Figure 1. it was known that the average percentage of total passengers of BRT and Pete-Pete; male passanger was 47.5% while, female passenger was 52.5%.
Based on the description above, it was found that the number of people who travel using public transportation, both women and men were almost equal.

Table IV: the Age of Passengers

Age	Total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 15	27	267	294	3	23	13
15-25	393	475	868	43	41	42
26-35	165	209	374	18	18	18
36-45	274	162	436	30	14	22
>46	55	46	101	6	4	5
Total	914	1159	2.073	100	100	100

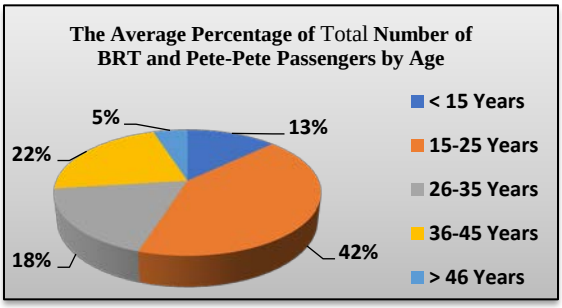

Figure 2: Percentage of Public Transportation Passengers Based on Age

Based on Figure 2. it was known that the average percentage of BRT and Pete-pete passengers by age was dominanted by 15-25 years old with the percentage of 42%, then followed by the ages of 36-45 years with the percentage of 22% and the ages of 26-35 years with

the percentage of 18%. Meanwhile, passengers who were <15 years old and>46 years old were in the fewest position that were 13% and 5% respectively.

Table V: Level of Education of the Passengers

Education	Total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Primary school/ Equivalent Level	0	0	0	0	0	0
Secondary school/ Equivalent Level	165	232	397	18	20	19
High School/ Equivalent Level	393	475	868	43	41	42
Academics/ Equivalent Level	473	209	282	8	18	13
Scholar	283	243	526	31	21	26
Total	914	1159	2.073	100	100	100

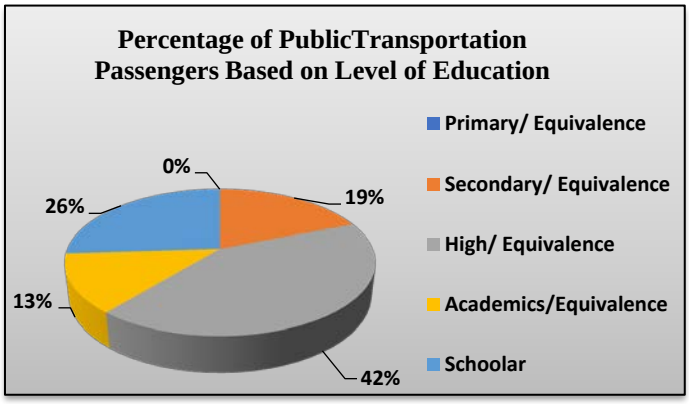

Figure 3: Percentage of Passengers of Public Transportation Based on Education Level

Based on Figure 3. it was known that the average percentage of total BRT and pete-pete passengers dominated by the participants in the level of high school or equivalence of it, that was 42%, then followed by the passengers with the educational level of schoolar with the percentage of 26% and passengers of secondary education level with the percentage of 19% . Meanwhile, in the fewest position were the passengersof Academics/ equivalent level of it as much as 13% and the passengers of primary school/ elementary of education level that was 0% or in other words, there was none.

Table VI: The profession of Passengers

Types of profession	Total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Students/ college students	292	487	779	32	42	37
Employee	110	177	287	12	15	13,5
Civil Servants/ Police/ Military Army	9	205	214	1	18	9,5
Entrepreneur	101	35	136	11	3	7
Others	402	255	657	44	22	33
Total	914	1159	2.073	100	100	100

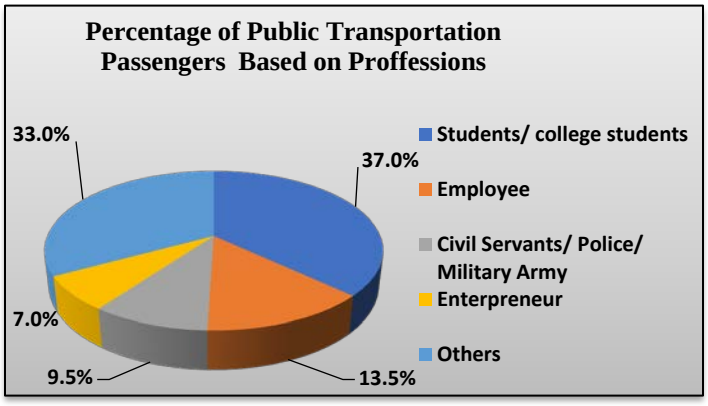

Figure 4: Percentage of Public Transportation Passengers Based on Type of Professions

Based on Figure 4. it was known that the percentage of the total number of BRT and Pete-pete passengers dominatedby the students / college students with the percentage of 37%, then followed by other professions with a percentage of 33% and employees with a percentage of 13.5%. Meanwhile,in the fewest position wasthe passengerswhose professions as civil servants / police / military armythat was 9.5% and the passengers with the entrepreneurial type of work that was 7%.

Table VII: Strata in the family of each Passengers

Strata in the Family	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Husband	27	35	62	3	3	3
Wife	430	614	1044	47	53	50
Son/Daughter	384	464	848	42	40	41
Sibling	64	23	87	7	2	4.5
Parent	9	23	32	1	2	1.5
Total	914	1159	2.073	100	100	100

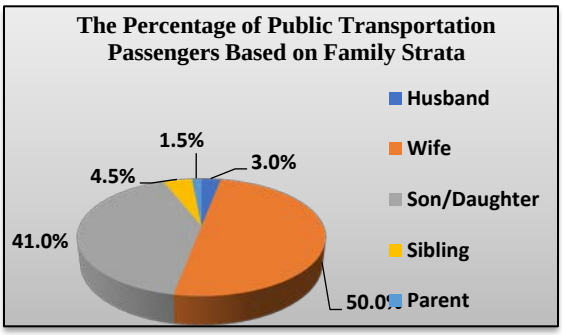

Figure 5: The Percentage of Public Transportation PassengersBased on Strata in the Family

Based on Figure 5. it was known that the average percentage of BRT and Pete-pete passengers based on the strata in the family was dominated by wives with the percentage of 50%, then followed by children (son/daughter) with the percentage of 41% and siblings with the percentage of 4.5%. Meanwhile, the fewest positions were BRT and *Pete-pete* passengers based on strata in the family as Husbands that was 3% and as parents that was 1.5%.

Table VIII: Dependents family member of the Passengers

Dependents family members (person)	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
1	142	220	362	17	19	18

2	238	285	523	26	24	25
3	55	116	171	6	10	8
4	41	81	122	3	7	5
5	18	20	38	2	2	2
None	420	437	857	46	38	42
Total	914	1159	2.073	100	100	100

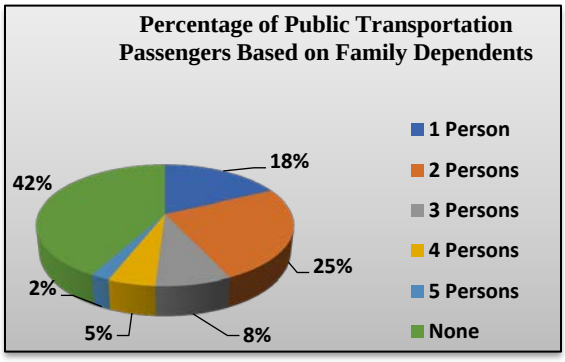

Figure 6: Percentage of Public Transportation Passengers Based on the Family Dependents

Based on Figure 6. it was known that the average percentage of BRT and *pete-pete* passengers based on dependents in the family were dominated by the passengers who did not have dependents in the family with the percentage of 42%, then followed by passengers who had dependents of 2 people in the family with the percentage of 25% and dependents in the family of 1 person with the percentage of 18%. Meanwhile, passengers with dependents in the family as many as 3 people, 4 people and 5 people were in the fewest position with each percentage of 8%, 5% and 2%.

Table IX: Passenger VehiclesOwnership

Vehicles Ownership	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
None	347	533	880	38	46	42
Car	101	81	182	11	7	9
Bicycle	9	23	32	1	3	2
Motorcycle	457	522	979	50	44	47
Total	914	1159	2.073	100	100	100

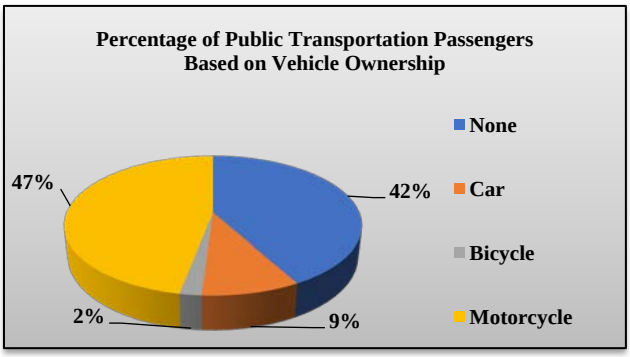

Figure 7: Percentage of Public Transportation Passengers Based on Vehicle Ownership

Based on Figure 7. it wasknown that the average percentage of BRT and pete-pete passengers based on vehicle ownership was dominated by the passengers who own motor vehicles with the percentage of 47%, then followed by the passengers who did not have a vehicle with the percentage of 42% and passengers who own a car with the percentage of 9%. Meanwhile, thefewest position of the percentage was the passengers who had bicycles,that was 2%.

Table X: The Origin Location of Passengers'Trip

Origin Location	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
House	649	730	1379	71	63	67
Office	27	81	98	3	7	5
School / Campus	119	197	316	13	17	15
Tourist Attraction	18	0	18	2	0	1
Mall	101	151	252	11	13	12
Total	914	1159	2.073	100	100	100

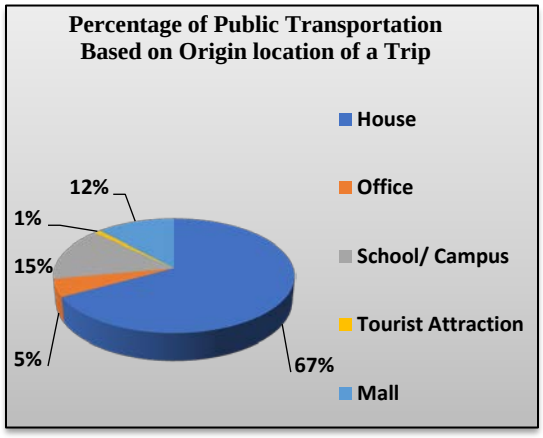

Figure 8. Percentage of Public Transportation Passengers Based on the Origin location of a Trip

Based on Figure 8. it was known that the average percentage of total BRT and pete-pete passengers based on the origin location of passengers' trip was dominated by the passengers of the origin location from house with the percentage of 67%, followed by passengers of the origin location from school / campus with the percentage of 15 % and passengers with the origin location from mall with the percentage of 12%. Meanwhile, passengers of the origin location from office and recreation area/ tourist attractionwerein thefewestposition, that were 5% and 1% respectively.

Table XI. Passengers Travel Destinations

Travel Destination	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
House	137	197	234	15	17	16
Office	128	232	360	14	20	17
School /Campus	128	185	313	14	16	15
Tourist Attraction	0	0	0	0	0	0
Mall	521	545	1066	57	47	52
Total	914	1159	2.073	100	100	100

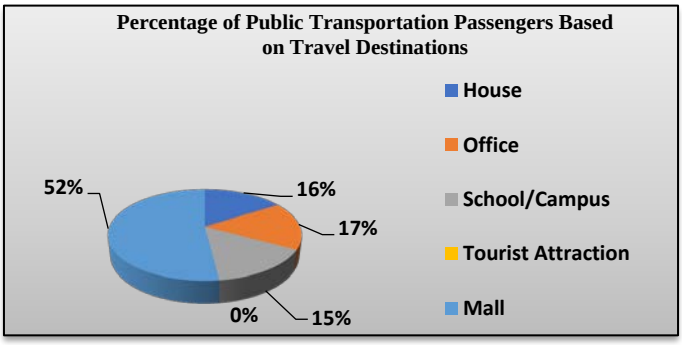

Figure 9: Percentage of Public Transportation PassengersBased on Travel Destinations

Based on Figure 9. it was known that the average percentage of BRT and pete-pete passengers based on travel destinations was dominated by the passengers that would go to mall with the percentage of 52%, then followed by passengers that would go tooffice with the percentage of 17% and passengers that would go home or house as the travel destination with the percentage of 16%. Meanwhile, in the fewest positions were the passengersthat would go to school / campus with the percentage of 15% and passengers that would go to tourist attractionbythe percentage of 0% or in other words, there was none.

Table XII: Frequency of Using Public Transportation / day

Frequency /day	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
1	740	846	1586	81	73	77
2	174	313	487	19	27	23
3	0	0	0	0	0	0
Total	914	1159	2073	100	100	100

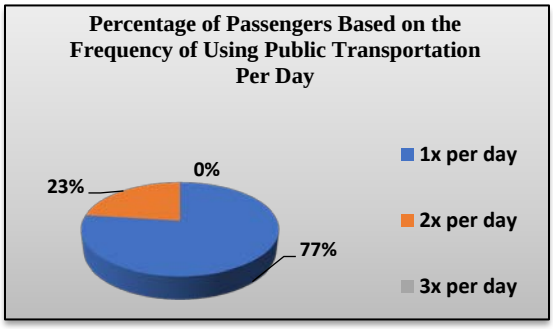

Figure 10: Percentage of Passengers Based on the Frequency of Using Public Transportation Per Day.

Based on Figure 10. it was known that the average percentage of total BRT and pete-pete passengers based on the frequency of using public transportations per day was dominated by the passengers with the frequency of using public transportation 1x per day onthe percentage of 77%, and in the fewest position was the passengers with the frequency of using public transportation 2x per day with the percentage of 23%. Meanwhile, the percentage of passengers with the frequency of using public transportation 3x per day was 0% or in other words, there was none.

Table XIII: Frequency of Using Public Transportation / Month

Frequency /Month	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
1-5 times	475	510	985	52	44	48
6-10 times	165	348	513	18	30	24
11-15 times	82	127	209	9	11	10
16-20 times	91	93	184	10	8	9

21-30 times	101	81	182	11	7	9
Total	914	1159	2.073	100	100	100

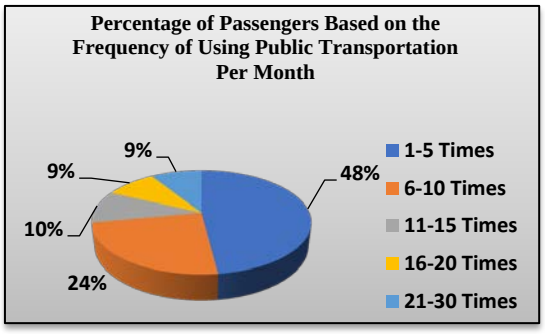

Figure 11. Percentage of Passengers Based on the Frequency of Using Public Transportation Per Month.

Based on Figure 11. it was known that the average percentage of total BRT and pete-pete passengers based on the frequency of using public transportation per month was dominated bythe passengers with the frequency of using public transportaion 1-5 times which was 48%, then followed by the passengers with the frequency of using public transportaion6-10 times,that was 24% and passengers with the frequency of using public transportaion 11-15 times that was 10%. Meanwhile, in the fewest position was the passengers with the frequency of using public transportaion16-20 times that was 9% and the passengers with the frequency of using public transportaion21-30 times with a percentage of 9%.

Table XIV: Modesof Transporation Used from the Origin Locationto the Stop / Pete-Pete Routes

Modes of Transportation Used	The total number of passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Walking	347	614	988	41	53	47
Motorcycle Taxi	73	139	212	8	12	10
Pete-Pete (a kind of public transportation)	256	70	326	28	6	17
Motorized Pedicab	73	185	258	8	16	12
Picked up by someone	138	151	289	15	13	14
Total	914	1159	2.073	100	100	100

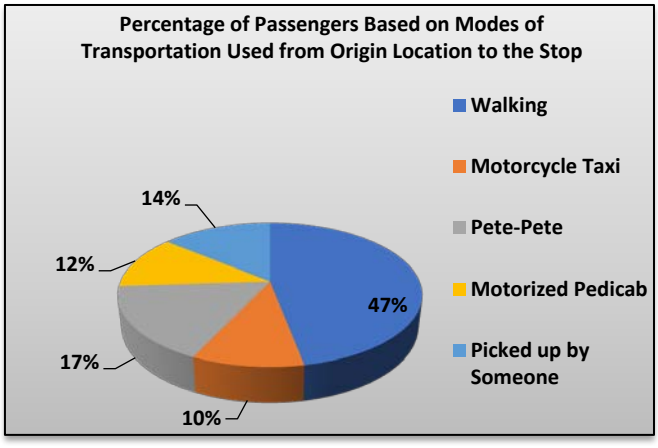

Figure 12: Percentage of Passengers Based on Modes of Transportation that were Used from the Origin Location to the Stop / Pete-Pete Route.

Based on Figure 12. it was known that the average percentage of total number of BRT and pete-pete passengers based on the modes of transportation used from the origin location to the bus stops / pete-pete routewere dominated by the walkingpassengers with a

percentage of 47%, then followed by the passengers using pete-pete with a percentage of 17% and the passengers who were picked up by someone at the percentage of 14%. Meanwhile, in the fewest positions were the passengers who usedmotorized pedicab with a percentage of 12% and passengers who usedmotorcycle taxi with a percentage of 10%.

Table XV: Modes of Transportation that were Used from the Bus Stop / Pete-Pete Route to the Destination

Modes of transportation used	The Total Number of Passangers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
Walking	631	661	1292	69	57	63
Motorcycle Taxi	55	162	217	6	14	10
Pete-Pete (a kind of public transportation)	110	70	180	12	6	9
Motorized Pedicab	91	209	300	10	18	14
Picked up by someone	27	57	84	3	5	4
Total	914	1159	2.073	100	100	100

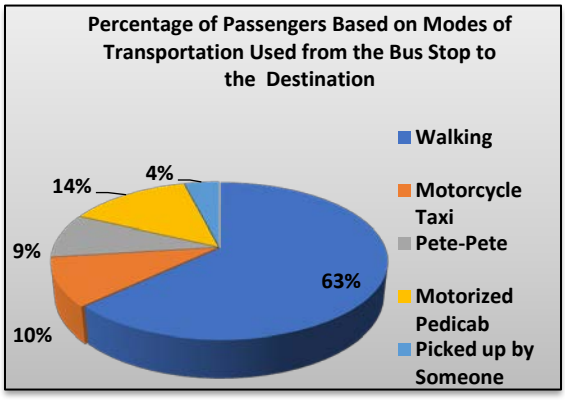

Figure 13: Percentage of Passengers Based on Modes of Transportation Used from the Bus Stop / Pete-Pete Route to the Destination.

Based on Figure 13. it was known that the average percentage of total number of BRT and pete-pete passengers based on the mode of tranportation used from the bus stop / Pete-pete route to the destination were dominated bythe walking passengers with a percentage of 63%, thenfollowed bythe passengers using motorized pedicab with a percentage of 14% and passengers who usedmotorcycle taxi with a percentage of 10%. Meanwhile, the fewest positions were the passengers who usedPete-pete with a percentage of 9% and then followed by the passengers who werepicked up by someoneinthe percentage of 4%.

Table XVI: The Length between the Place of Origin to the Bus Stop / Pete-Pete Route(L1)

LengthEstimation	Total number of passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 50 m	119	128	247	13	11	12
50-100 m	165	232	397	18	20	19
100-200 m	192	267	459	21	23	22
200-300 m	64	104	168	7	9	8
300-400 m	45	150	195	5	13	9
> 400 m	329	278	607	36	24	30
Total	914	1159	2.073	100	100	100

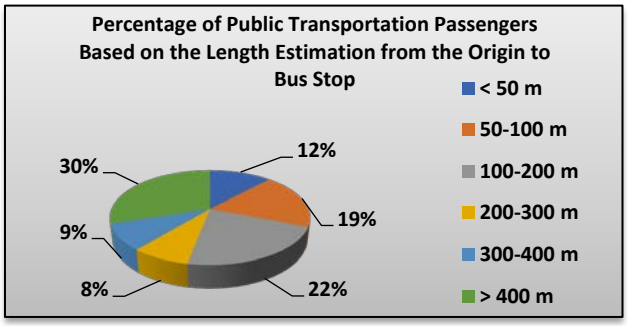

Figure 14: Percentage of BRT and Pete-pete Passengers Based on Length Estimation ofthe Origin to the Bus Stop / Pete-pete Route

Based on Figure 14. it was known that the average percentage of BRT and pete-pete passengers based on the travel distance estimation of the origin location to the bus stops was dominated by the passengers with the length estimation of>400m with a percentage of 30%, then followed by passengers with the length estimationof 100-200m with a percentage of 22% and passengers with the length estimationof 50-100m with a percentage of 19%. Meanwhile, passengers with the length estimationof <50m, 300-400m and 200-300m were in the fewest positions with the percentages of 12%, 9% and 8% respectively.

Table XVII: The Length Estimation from the Bus Stop/Pete-peteRouteto Destination (L2)

Length Estimation	Total Number of Passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 50 m	457	440	897	50	38	44
50-100 m	165	255	420	18	22	20
100-200 m	27	81	108	3	7	5
200-300 m	55	186	241	6	16	11
300-400 m	82	81	163	9	7	8
> 400 m	128	116	244	14	10	12
Total	914	1159	2.073	100	100	100

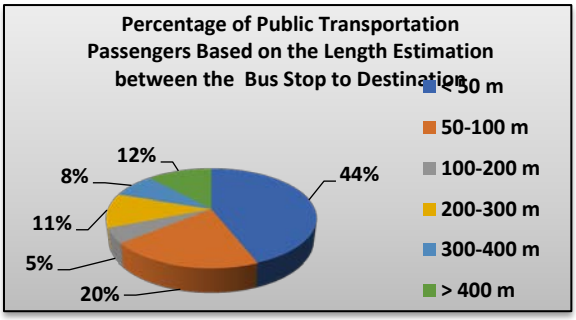

Figure 15: Percentage of Public TransportationPassengers Based on the LengthEstimation betweenBus Stop to Destination.

Based on Figure 15. it was known that the average percentage of BRT and pete-pete passengers based on the length estimation from the bus stop to the destination was dominated by the passengers with thelength estimationof <50m bythe percentage of 44%, then followed by passengers with the length estimationof 50-100m bythe percentage of 20% and passengers with the length estimationof>400m bythe percentage of 12%. Meanwhile, passengers with the length estimationof 200-300m, 300-400m and 100-200m were in thefewest position in the percentages of 11%, 8% and 5% respectively.

Table XVIII: Travel Time of Using Public Transportation (t1)

Travel Time (Minutes)	Total Number of Passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 15	27	58	85	3	5	4
15-30	119	128	247	13	11	12
30-45	256	371	627	28	32	30

45-60	411	475	886	45	41	43
60-90	83	81	164	9	7	8
>90	18	46	64	2	4	3
Total	914	1159	2.073	100	100	100

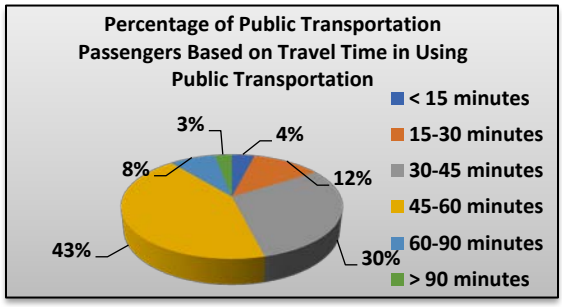

Figure 16: Percentage of Public Transportation Passengers Based on Travel Time of Using Public Transportation.

Based on Figure 16. it was known that the average percentage of BRT and pete-pete passengers based on travel time of using public transportationwasdominated by the passengers with a travel time of 45-60 minutes with a percentage of 43%, followed by passengers with a travel time of 30- 45 minutes with a percentage of 30% and passengers with a travel time of 15-30 minutes with a percentage of 12%. Meanwhile, passengers with travel time of 60-90 minutes, <15 minutes and>90 minutes were in the fewest position with the percentages of 8%, 4% and 3% respectively.

Table XIX: Travel Time Estimation from the Origin to the Bus Stop / Pete-pete Route (t2)

Travel Time (Minutes)	Total Number of Passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 15	255	319	569	28	28	28
15-30	127	252	379	14	22	18
30-45	240	190	435	26	16	21
45-60	63	106	169	7	9	8
60-90	44	103	157	5	9	7
>90	185	189	364	20	16	18
Total	914	1159	2.073	100	100	100

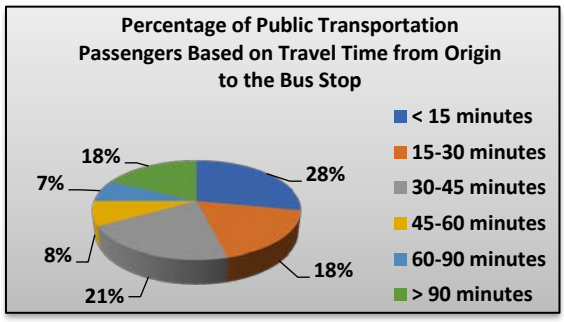

Figure 17: Percentage of Public Transportation Passengers Based on Travel Time from the Originto the Bus Stop

Based on Figure 17. it was known that the average percentage of BRT and pete-pete passengers based on the travel time from the origin to the bus stop was dominated by the passengers with a travel time of <15 minutes with a percentage of 28%, followed by passengers with a travel time of 30-45 minutes with a percentage of 21% and passengers with a travel time of>90 minutes with a percentage of 18%. Meanwhile, passengers with travel times of 15-30 minutes, 45-60 minutes and 60-90 minutes werein the fewest position with each percentage of 18%, 8% and 7%.

Table XX: Travel Time Estimation from the Bus Stop to Destination (t3)

Travel Time (Minutes)	Total number of passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 15	475	510	985	52	44	48
15-30	183	209	492	20	18	19
30-45	37	93	130	4	8	6
45-60	48	104	142	5	9	7
60-90	153	150	303	17	13	15
>90	18	93	111	2	8	5
Total	914	1159	2.073	100	100	100

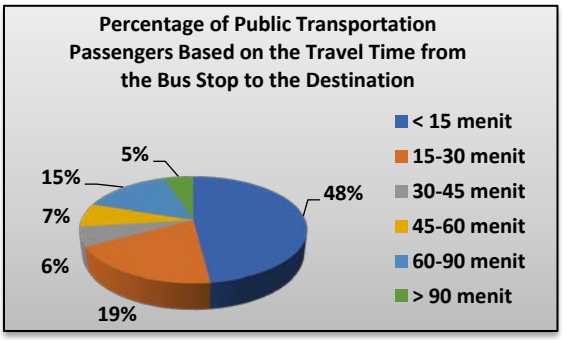

Figure 18: Percentage of Public Transportation Passengers Based on Travel Time from the Bus Stop to the Destination.

Based on Figure 18. it was known that the average percentage of total number of BRT and pete-pete passengers based on the travel time from the bus stop/ pete-pete route to thedestination was dominated by the passengers with a travel time of <15 minutes with a percentage of 48%, followed by the passengers with a travel time of 15-30 minutes with a percentage of 19% and passengers with the travel time of 60-90 minutes with a percentage of 15%. Meanwhile, passengers with a travel time of 45-60 minutes, 30-45 minutes and> 90 minutes werein the fewest position witheach percentage of 7%, 6% and 5%.

Table XXI: Cost incurred by the passengers from the originto the bus stop (c1)

Cost (Rp)	Total number of passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 2000	292	417	702	32	36	34
2000-4000	128	209	337	14	18	16
4000-6000	375	267	642	41	23	32
6000-8000	37	185	232	4	16	10
8000-10000	73	48	121	8	4	6
> 10000	9	35	44	1	3	2
Total	914	1159	2.073	100	100	100

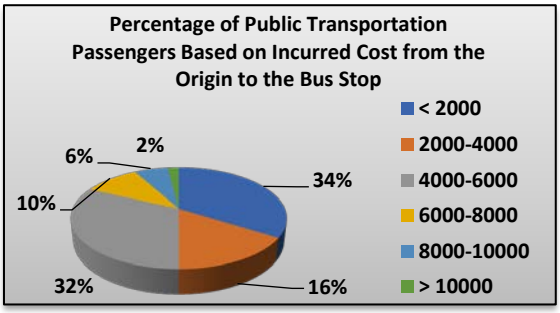

Figure 19: Percentage of Public Transportation Passengers Based on IncurredCostfrom Originto Bus Stop.

Based on Figure 19. it was known that the average percentage of total passengers of both BRT and pete-pete based on the incurred cost from the origin location to the bus stops was dominated by the passengers with the cost of <Rp.2000 with the percentage of 34% ,

then followed by the passengers with costs of Rp.4000-6000 with the percentage of 32% and passengers with costs of Rp.2000-4000 with a percentage of 16%. Meanwhile, passengers with the incurred cost of Rp.6000-8000, Rp.8000-10000 and >Rp.10000 were in the fewest position with the percentage of 10%, 6% and 2% respectively.

Table XXII. Passenger Incurred Cost from the bus stop/ pete-pete route to the destination

Cost (Rp)	Total number of passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 2000	576	684	1260	63	59	61
2000-4000	27	197	224	3	17	10
4000-6000	164	93	257	18	8	13
6000-8000	64	58	122	7	5	6
8000-10000	46	104	150	5	9	7
> 10000	37	23	60	4	2	3
Total	914	1159	2.073	100	100	100

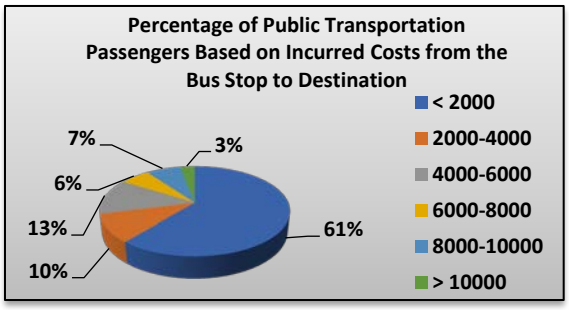

Figure 20: Percentage of Passengers of Public Transportation Based on Incurred Costs From the Bus Stop to Destination.

Based on Figure 20. it was known that the average percentage of total passengers of both BRT and pete-pete based on the costs incurred by the passangers from the bus stop / pete-pete route to the destination was dominated by the passengers with the cost of <Rp.2000 bythe percentage of 61% , then followed by passengers with costs of Rp.4000-6000 by the percentage of 13% and passengers with costs of Rp.2000-4000 by the percentage of 10%. Meanwhile, the passengers with the costs of Rp.8000-10,000, Rp.6000-8000 and> Rp.10,000 were in the fewest position with the percentage of 7%, 6% and 3% respectively.

Table XXIII: Monthly Passengers Income

Income (Rp/Month) In a million	Total number of passengers			Percentage (%)		
	BRT	Pete-Pete	Total	BRT	Pete-Pete	Total
< 1,500	356	151	507	39	13	26
1,500-2,500	201	533	734	22	46	34
2,500-3,500	174	290	464	19	25	22
3,500-5,500	128	92	220	14	8	11
5,500-6,500	46	81	127	5	7	6
> 6,500	9	12	21	1	1	1
Total	914	1159	2.073	100	100	100

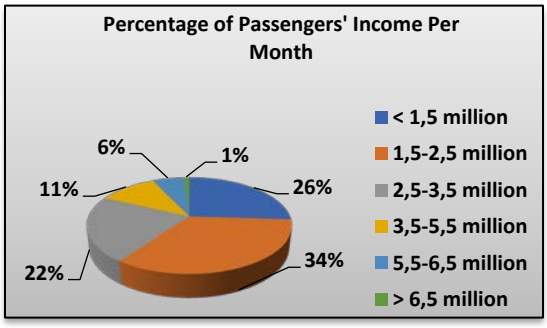

Figure 21: Percentage of Public Transportation Passengers Based on theirIncome per Month.

Based on Figure 21. it was known that the average percentage of total BRT and pete-pete passengers based on monthly incomewas dominated by the passengers with the income of 1.5-2.5 million by the percentage of 34%, followed by the passengers with monthly income of<1.5 million per month by the percentage of 26%, then the passengers with monthly income of 2.5-3.5 million by the percentage of 22%. Meanwhile, passengers with monthly income of 3.5-5.5 million, 5.5-6.5 million and>6.5 million were in the fewest position with each percentage of 11%, 6% and 1% respectively.

According to the results of the analysis, the characteristics of public transport passengers in Makassar showed that the number of male passengers who traveled almost the same with the number of female passengers. Meanwhile,the most well-traveled passangerswere the passangers between the ages of 15-35 years.According to the educational background point ofview, the most well-traveled passengers were the high school students. The use of public transportation to transport high school students has been explained in various studies. The main reasons are safety and security issues.

Based on the profession types, the fewest people that used public transportation were those who had profession as entrepreneurs. Regarding to the analysis of the passangers from the point of view ofthe dependents in the family, strata and vehiclesownership, most passangers that used public transportation respectively were; those who did not have dependents, wives and passengers who did not have any vehicle. According to the view of the origin of the trip, the passenger was dominated by the passengers who traveled from their house, while the most traveled destination was mall. A study conducted in Seoul showed that trip to work expresses the same as the distribution of morning peak trip engagement, whereas shopping trip engagement distribution in time reflects the day-time opening hours of the shops, and leisure trip engagement (Choi et al 2014)

Mode of transportation used from home to the the bus stop and from the bus stop to the destination was generally on foot (walking), the passengers traveled as many as once a day and generally they used public transportation 1-10 times a month. They traveled from home to bus stops as far as 100-400 meters, while from the bus stop to the destination, the travel distance was generally less than 100 meters. The travel time used from the place of origin to the bus stop was less than 15-45 minutes and from the bus stop to the destination was less than 15-30 minutes, while the travel time needed in using public transportationwas 30-60 minutes.

The average cost incurred from the place of origin to destination was Rp. 12,319 for one trip, while the income of the public transportuserswas in the range of less than 1,5-2,5 million per month.

Previous research stated that transportation choices were influenced by several factors, such as individual characteristics and lifestyle, type of trip, perceived service performance of each transportation mode and situational variables. This showed the need for segmentation by considering travel attitudes and behavior. Policies that aim to influence car use must be targeted at the most motivated to change market segments and are willing to reduce the frequency of private vehicle use and change to public transportation (Beirão and Cabral, 2007). Things that can increase the attractiveness of public transportation are reliability and frequency of services, the most effective attributes in attracting car users are mostly affective and connected to individual perceptions, motivation and context. For this reason, it is necessary to stipulate promotional tariffs and reduce disruptive transportation policies. Attributes, basic accessibility, reliability and provision of mobility, which are felt by target markets must be considered as important service attributes (Redman et al, 2013). For cases in Indonesia the reasons of most respondents choose to use public transportation because low price (cheap) and quick. Percentage lowest public transportation use that was for reasons safe for. This showed most users of public transportation indeed more consider the side economy in the choice of mode transportation to do activity (Chairunnisa, 2013).

IV. CONCLUSION

According to the results of the analysis, the characteristics of public transport passengers in Makassar showed that the number of male passengers who traveled almost the same with the number of female passengers.Meanwhile,the most well-traveled passangerswere the passangers between the ages of 15-35 years.According to the educational background point ofview, the most well-traveled passengers were the high school students. Based on the profession types, the fewest people that used public transportation were those who had profession as entrepreneurs. Regarding to the analysis of the passangers from the point of view ofthe dependents in the family, strata

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