CHARACTERISTICS OF SELECTION MODE BASED ON HOUSEHOLD CATEGORY AND TYPE OF WORK TRIP IN WEST JAKARTA

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ABSTRACT

The work activities will lead to a journey that can generate movement of people who ultimately require a choice of mode of transportation. This study aims to analyze the influence of household characteristics on the selection of modes and travel time for work trips to employees in West Jakarta.

The selection of modes in urban areas is not a random process but is influenced by household characteristics. Higher income, education, and age-class influence in terms of mode selection and travel time.

This research was conducted by questionnaire technique that is distributing questioner to employees in West Jakarta as 100 questionnaires to know the characteristics of respondent household related to the use of modes and travel time. The technique of sampling employee questionnaires using random sampling. The analysis method is based on descriptive analysis, correlation analysis and cross-table analysis (crosstab) with tools using SPSS.

Descriptive analysis of the study concluded that 62% of the respondents tested were male, 52% respondent's education was Bachelor degree, the respondent had income less than Rp. 4.000.000,00 as many as 51%, and the incoming in the 27 - 32 years old is the majority of 27%, while the respondents who spend the time of work for more than 60 minutes as much as 51%. And the final study shows that the characteristics of the use of modes and the time of travel appear to be influenced by the household character of the respondent but has a correlation with the low value (0.50)

Keywords - *Transport Demand Manajemen (TDM), Pearson Correlation, Regression, Chi square.*

I. INTRODUCTION

West Jakarta is one of the City of Administrative in DKI Jakarta Province has population more than 1,636,242 people with an average population growth of 2.43 percent per year. West Jakarta is approximately 129.19 km square with a density of 12,665 people per square kilometer. The condition of population growth is not proportional to the growth of roads causing potential traffic problems in the road such as traffic congestion, high delay and others.

The total length of roads in DKI Jakarta is approximately 10% of the total length of road in Java. The comparison between the length of the road and the total area in Jakarta is only 4%, which ideally for the city of Jakarta is 10-15%.

The relatively high growth of motor vehicles for motor vehicles, especially motorcycles, grew by 31.95% from 2003 data.

1. Traffic Conditions

The Provincial Government of DKI Jakarta issued a policy of rotation of office hours and school entry hours, which was at 7:00 am changed to 6.30 hours for public schools, public office hours and private companies in the region Central and North Jakarta at 7.30, West Jakarta and East Jakarta office hours at 8:00, while for South Jakarta hours work hours at 09.00. This causes the increase of traffic density time from 7.00 - 9.00 to 6.00 - 9.00 with increasing intensity of density. This becomes interesting to examine the cause of the increase in time and intensity of the density.

From the preliminary survey, it is found that some people not only travel but also do other activities such as shopping, sports in the gym, taking children to school and others or hereinafter called trip chains. This causes the number and timing of the journey to be longer and done at the same time or the phenomenon where the work trip is also a school trip. The longer the journey with the parents who want to enter their children to the excellent schools that are further away from home.

Traffic delay is an important issue in Jakarta, some data found that accidents in urban areas are increasing. Due to limited resources and materials, to supplement the transportation system and sometimes bordering on environmental constraints, it is expected to do something to control delays or reduce congestion by managing demand for transportation needs. Transport demand management has the goal of reducing vehicle rush hour

periods with strategies such as increased joint use of a vehicle (ride sharing), use of public transport, flexible work schedules / flexibility of work and telecommuting / working with telecommunication tools.

II. ACCESSIBILITY AND MOBILITY

2.1 Movement

A person's journey is intimately tied to the concept of an area where the person is engaged within a certain period of time, or in other words that one will consider the activities, knowledge of the area and the relationship between the area and time. For the purposes of such activities, road users choose routes depending on time and space to get their wants, needs and goals. Movements will be made as optimal as possible in accordance with knowledge, reason and time route. The mode used is affected by travel time, vehicle type and activity type. Activity scheduling can be determined although some activities can not be replaced. (OECD, 2002).

2.2 Characteristics of Transport Needs

The need for transportation services is highly qualitative and has different characteristics as a function of time, travel purpose, frequency, type of cargo and others. Transportation services [not in accordance with the need for movement causes the transport system is not useful. This makes analyzing and forecasting the need for movement more difficult. (OECD, 2002).

As we know, movement occurs because of the process of desire to meet the needs. Fulfilling needs is an activity that should usually be done every day, for example the fulfillment of the need for work, education, health and sports. We really do not have to move if all those needs are available where we are (where we live). Because the location of the activity is spread heterogeneously in the space that eventually leads to the movement used for the fulfillment process (Tamin, O.Z, 1998).

In doing the movement to meet those needs, we have two choices, namely moving in a mode of transportation or without modes of transportation (walking). Movement without transportation is usually short (1 - 2 km), while the movement of modes of transportation is distant or distant. The types of transportation modes used vary widely such as private cars, taxis, buses, trains, motorcycles, airplanes and ships.

The basic purpose of the step generation stage is to produce a model that links land use to the number of moves leading to a zone or the number of moves leaving a zone. The origin and destination zone of the movement usually also uses the term trip end.

2.3 Classification of movement

a. Based on the purpose of movement
In practice, there is often a better model of the rise of movement can be obtained through separately modeled movements with different aims. In the case of home-based movements, the five categories of frequent movement objectives are:
1. movement to the workplace
2. movement to school or university (movement with educational purpose)
3. movement to the shopping place
4. movements for social and recreational purposes,
5. and others
The two objectives of the first movement (work and education) are called the ultimate motion objectives that every person is required to perform on a daily basis, while the other objectives of the movement are optional and not routinely performed. Non-home based movements do not always have to be separated because the numbers are small, only about 15-20% of the total movement occurs.

b. Based on time
Movements are usually grouped into movements during peak hours and in non-busy times. The proportion of movement performed by each movement objective greatly fluctuates or varies throughout the day. The movement during the morning rush hour periods (usually opposite to the movement during the afternoon peak hours) occurs between 7 am to 9 am and non-busy hours ranging from 10 am to 12 pm.

c. Based on the type of person
This is one of the important types of groupings because the behavior of individual movements is strongly influenced by socio-economic attributes. The attributes are:
1. income level: there are usually two levels of Indonesian income: high and low; for example 4 million and 4 million
2. vehicle ownership rate: 0.1.2 vehicles or more than two vehicles per household;
3. no. of family's member.

2.4 Transport Demand Management / TDM

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Transport Demand is a travel necessity that will choose a specific trip such as the quality of the trip and its cost. Transport Demand Management (TDM) consists of several strategies that will result in the turn of the traveler. Transport Demand Management (TDM) is increasingly being used to address various problems. With increasing TDM, especially alternative to expand the road and parking facilities. So far, most countries have developed a wide network of roads. The system is now saturated, the major transport problems facing the community are traffic congestion and parking, adequate mobility for pedestrians, economic, social and environmental costs associated with vehicle travel rates. Problems that can be resolved with TDM are as follows:

1. Increased facility costs. The cost of road expansion and parking facilities is increasing. In many cases this is more effective for managing demand than continuing to expand supply.
2. Increased urbanization. In most developed countries (typically 80-90%) workers are located in urban areas, where traffic and parking will be a significant problem.
3. Energy costs. Vehicle fuel costs are projected to increase in the future due to depletion of fuel supply and environmental problems.
4. Consumer preferences and market desires. Many consumers want to stay in multi-modal locations / it is possible to walk and bike safely, and have access to quality public transport.
5. Environmental problems. Concerns over air pollution, and other environmental impacts will motivate policy changes to encourage more efficient transport.

III. RESULT AND ANALYSIS

3.1. Characteristics of Respondents by gender

From the results of the survey that has been conducted on the respondents can be drawn conclusion as men that is 62%, while women by 38%.
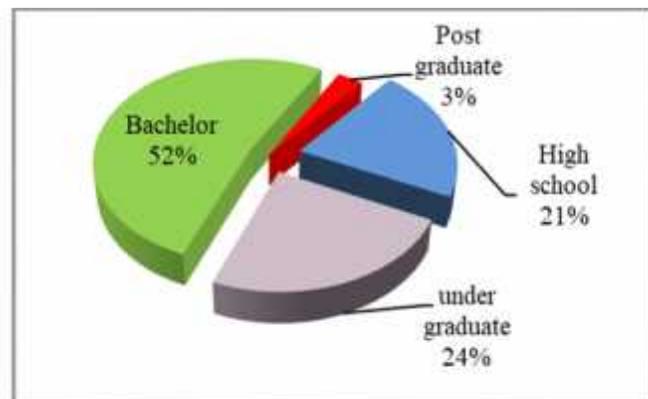
3.2 Characteristics of Respondents by Age

It is seen that most of the employees working in the West Jakarta area are in the range of 27 to 32 years of age, and male sex dominates the number of respondents except respondents who are in the 21 to 26 years age range dominated by female respondents.
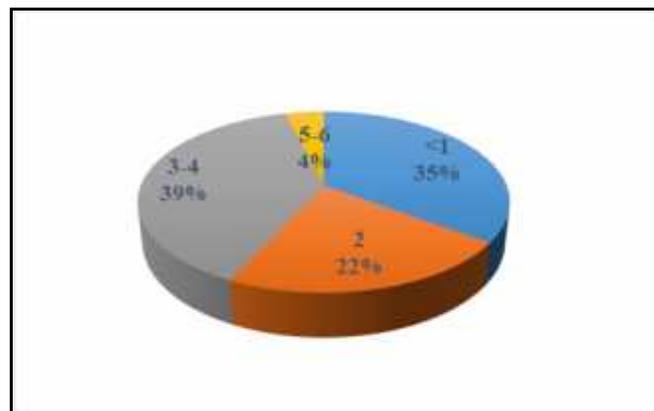
3.3 Characteristics of Respondents by Type of Work and Income

The number of private employees dominates the number of respondents is 74% followed by civil servants in the second with 15%, private labor in West Jakarta dominate because in that area many trade centers and industrial centers such as Jl. Daan Mogot.

3.4 Characteristics of Respondents Based on Education Level

3.5 Characteristics of Respondents by Number of Families

3.6 Characteristics of Respondents Based on Total Vehicle Ownership

The ownership of vehicles under 2 pieces have a very dominant number of 75%

3.7 Characteristics of Travel Type of Work

3.7.1. Characteristics of Respondents Viewed from the Purpose of the Journey

Almost all respondents in West Jakarta have a travel destination in their daily life is to work leaving only 3 respondents intent for business.

3.7.2. Mode Selection

Apparently that a respondents who own a car could not be sure to use to the works due to the streets of West Jakarta are jammed at certain points in peak hours therefore respondents prefer to use motor because it is relatively easier to use in a jammed area.

3.7.3. Characteristics of Change of Respondent's Mode

Motorcycle users are not to change modes because parking conditions and public transport are less confortable.

3.7.4. Traveling Children

Most of the respondents are male and young family, only 21% of the respondents deliver the children on their journey.

3.7.5. Characteristics of Respondents Based on Time Travel Work

More than half of the respondents make the work trip more than 60 minutes; this is because the average respondent lives in the area of Tangerang and Bekasi so it takes a long travel time and also the impact of traffic jams.

3.5 Results of Correlation Analysis

There is no related between type of mode and education, income and classification of age.

IV.   CONCLUSION

Based on the results of analysis and discussion can be obtained some conclusions as follows:

1. In West Jakarta are mostly male as many as 62 people and the rest is 38 people are women, whereas in the age classifications are in the age of 27 - 32 years. The educational elements 52% of 100 travelers are Bachelor / equivalent. In terms of income 56% have average monthly income less than 4 million rupiah.
2. Based on the correlation test between Household Characteristics (Education, Income, Age Class) with Mode Selection and Travel Time, there are no correlation between them.

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