

# **MAPPING OF TRAVEL ACTIVITY PATTERN TO THE CBD IN THE DEPOK AREA**

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## **ABSTRACT**

Mapping of travel activity pattern to the CBD is more important as an information to the decision makers to plan the city. This information included the location of place which is obviously needed when the traveller is trying to find a given destination and also on the attributes or characteristics of a place. Those information is required if the individual tries to assess the likelihood that a destination will satisfy a given need. Development of the new CBD, will change the previous land use to become paved area. Meanwhile, the Depok city was considered to be the catchment area. To avoid mismanagement in urban environment, the development of new public facilities should pay attention to the carrying capacity of the area.

Depok was rural area before the government developed large settlement for the civil servants in 1976, and after that it became a bedroom community. The development influenced the residents commuting activities to travel out of Depok area to work, school, shopping and so on. In 1987, the University of Indonesia was moved from Jakarta to Depok.

Population growth in the Depok area between 1990-1998 was decreased from 12.26 percent to 7.8 percent, however, it was still very high compared to the Jakarta Metropolitan area (2.6 percent). Meanwhile, the land use settlement was increased from 46 percent to 72.22 percent of the total area of Depok. The development on road connection was increased too.

In 1990, Depok seems to be divided into two local economic centers and to serve only for the daily needs. When the people need to go to the CBD, they should travel out the Depok area. Then, in 1995 the main CBD was developed along the Margonda street, the main access road in Depok. The CBD was developed in the new area, not the previous

one. The new CBD area is not far from the campus, it takes around 15 minutes by public transportation.

At present time, functionally, Depok is changed and become a secondary urban center. The travel activities pattern to the CBD are also changed. Today, the people not required to travel out the Depok area, when they need go to CBD. The distance to reach the CBD becomes shorter. The cost is vary from less than Rp.1.000,- to more than Rp.3.000,-, and the time is less than 10 minutes to 30 minutes from the settlements to the CBD in Depok area, depends on location of the settlement and public transportation. This phenomenon was proved by 93 percent of respondents, to reach the CBD in Depok area.

The AutoCAD, Arc / Info, and Arc / View were used to develop the Travel Activity Pattern maps in the 1990 and 2000.

## INTRODUCTION

Urban area is good when it is healthy, safely, and accessibly for the people. To achieve this condition, the urban area should provide service centre to serve their people (Sandy, 1989). The basic needs for the people are food and clothing. Therefore, the people need to have the facilities like market, and shopping centre. The other needs of the people are education, hospitals, and recreational area (Soemarwoto, 1988).

According to Tu and Goldfinch (1996), to select their house, people not only depend on the price of the house itself, but also distance to reach their work, and facilities around the neighbourhood. In Singapore, the Orchard Road is become the central business district with all the facilities to serve their people and their tourist (Yeung and Savage, 1996). In Bangkok, there is a central place hierarchy, which consist of neighbourhood centre, block centre, sectoral centre and city's new centre (Satoh,1999). However in Chicago, the hierarchy are neighbourhood centre, community centre, smaller regional centre, and mayor regional centre (Berry, 1967).

Depok was a rural area before the government developed large settlement (Perumnas) in 1976 and then it became a bedroom community. The development of Depok was influenced the residents commuting activities to go to work, school, shopping and so on. In the morning, the people travel to their office and school in Jakarta, and returned back to Depok in the evening. During the rush hour, in the morning and evening, a traffic jam is happened along the main road. In 1987, the University of Indonesia moved from Jakarta to Depok, and in 1993 Depok became a secondary urban centre around the Jakarta Metropolitan area.

The population growth in Depok between 1987-1998 was very high, around 7 percent per year. Meanwhile, in the metropolitan area (Jakarta), the growth rate was only 2,6 percent. It was lower compared to the cities around the metropolitan. Meanwhile, the growth rate of Bangkok was 2,83 percent and Tokyo 0,23 percent. The road accessibility from Jakarta to periphery areas was increased, and Depok area was changed also. Until 1991, functionally, Depok was only to serve the daily needs of the people, however, Depok then become a secondary service centre (Saraswati, 2000). Therefore, the people have to change their activities for the daily needs, especially, to choose the market to go. It is interesting to know, whether the people will consider the cost and the time to fulfill their needs ?

## **METHODOLOGY**

The development of economic service centre study is based on Saraswati (1991; 2000) research. Besides that, this study also utilized the on-site survey and the purposive random sampling questioners from the 87 households in the Depok area, in order to describe how much cost and time to reach the daily market and the service centre from their settlement. The people needs were divided into daily and non-daily needs. The SPSS (Statistical Product and Service Solution) was used to analyze : The correlation (cost and time to go to the market ), the mean, and the standard deviation ( cost and time to go to the market and the shopping centre), also the t test. Further on, several maps were made by using the data to visualize the condition of cost and time to reach the daily market and the service centre.

## **RESULT**

The population density in Depok area in 1970's was 9.53 persons per hectare. However, in 1980 the population densities were increased twice (18.82 persons per hectare) and 46 percent of the total land use of the Depok area was settlement. The population growth rate from 1970's to 1980 was 12.26 percent. The people of Jakarta tended to move to the Depok area, since the government developed the Perumnas in Depok. At the time, Depok has had five traditional markets, one was daily market and the other four were weekly markets (Anon,1984). The weekly markets generally offered basic convenience goods, which operated only once in a week, depending on the market day. The phenomenon indicated that, the spatial distribution of the market area was a convenience service centre (Hartshorn and Alexander, 1988).

In 1990, the population density in Depok area was 42,57 persons per hectare. According to the Saraswati (1991) study, Depok has three high quality markets. The quality value of the market was based on the varieties of the goods and the number of the market seller itself. The study showed that the people tended to go to the market around the settlement to fulfill their needs, which less then 500 metres from their houses. They usually took a public transportation or take a hike. In condition that no market existed close to their settlement, the people usually tended to buy the daily needs from the stall

closed to their house or getting them from the door-to-door sellers. Meanwhile, to fulfill their monthly needs, the people preferred to go to the supermarket (23 percent of respondents) or went to the market which provided higher quality goods (66 percent of respondents). To fulfill the fashion needs, the people preferred shopping out of Depok area (63 percent of respondents), because more varieties and choices were offered by the shops / supermarkets located on Jakarta or Bogor. Usually, the people went to Bogor, Kramat Jati, Pasar Minggu, Blok M and Senen, which are connected by the public transportation (train and buses), also to buy books and stationaries (20 percent of respondents). Along the main street which is closed to the markets, there are several shops and stalls (i.e. furniture, restaurant, photo-studio, watch service-centre, etc), and also medical doctor, drug store, banks, cinema and so on. Based on the study by Saraswati (2000), Depok seems to be divided into two local economic centres, one in the east of Ci Liwung (Liwung River) and another in the west of Ci Liwung. The spatial distribution on the market area are developed from the convenience service centre to the neighbourhood centre. The convenience service centre is still exist in the settlement, and far from the traditional market.

The population growth rate from 1990 to 1998 was decreased from 12.26 percent to 7.8 percent. Meanwhile, the settlement land use was increased from 46 percent to 72.22 percent of the total area of Depok.

During 1990's, in Margonda Street, the main road of Depok, some new housing-complex and housing-estate were developed, and regarded as a more better quality of residential development. The development of housing-estate consists of detached houses, while the housing-complex comprises two or more houses in a row. Both of them are equally characterised by their view and infrastructure, which provide security and amenity for the residents. In case of the housing-estate, the size and quality of house is relatively uniform, but the standard of the environment is different from place to place. The size of houses in the housing-complex are much smaller in than the housing-estate's.

Proceeding the housing-complex and the housing-estate development (1993's), there was an agglomeration process along that road as a shopping areas. The areas were covered with many commercial buildings, several shopping malls, and also the bus and train terminals. These commercial areas comprise rows of shop-houses, and some often clustered around the supermarket and local market. This new CBD was growth in the new area, not in the previous ones (east and west of the Ci Liwung). The new area is closed to the University of Indonesia, about 15 minutes by public transportation. It has been indicated also that the agglomeration process of economic activities occurs around the campus.

So, the people of Depok today, are served by two kinds of service centre, the neighbourhood and the block centres. In case, for the people who stay far from the centres, they have to spent much more money and time (more than Rp.2.000,- and more

than 30 minutes) to reach the market. The people who stay in the east of Ci Liwung are more lucky than they who stay in the south, because they spent money less than Rp.1.000,- and less than 10 minutes to reach the traditional market. The cost and time to travel to the market have a strong correlation (0.52) in  $\alpha$  0.10, and indicated that the shopping pattern on the daily needs in the Depok area was not changed (Figure 1). On the other hand, since there was an agglomeration, the number of people who chose the market out of Depok were decreased and lower than the previous period. It was proved by the 93 percent of respondents who used to travel to the shopping centre in Depok area (see Table 1).

The Figure 2, will describe the cost and time to reach the block centre from their settlement area in Depok, which was less than 10 minutes to more than 30 minutes, and the cost vary from less than Rp.1.000,- to more than Rp. 3.000,-

The SPSS was used to analyze the data, described that the mean cost and time to travel to the neighbourhood centre was Rp. 712,- and 13 minutes. Meanwhile, to reach the block centre the people need to use twice time (26 minutes) and the mean cost was Rp. 1.019,-. The t test shows that the cost and time to reach the neighbourhood and block centre was vary. It was indicated that the people will consider a cost and time to reach the neighbourhood centre, however, if they travel to the block centre, the cost and time were not a determinant factor.

It is important to have a shorter distance to the central place, and it will become a positive way to the urban planning or for the purpose of distribution on the shopping centre. The central place as traditional markets should improve their quality, one reason to develop the central place than the new shopping centre. The new shopping centre development will change the land use to become the paving areas. The development of paving areas are in progress, meanwhile the Depok area was considered to be the catchment area. To avoid a mismanagement in urban environment, new public facilities development as settlement, shopping centre, and industry, should also pay attention to the carrying capacity of the environment (Da Costa and Cintra, 1999).

### **CONCLUDING REMARKS**

By its function, Depok was changed from the area characterized only to serve the daily people needs, and then become a secondary urban centre, around the Jakarta Metropolitan area. This change of function is also an important role to change a shopping patterns on non-daily needs, so the distance to the shopping centre becomes shorter.

Analysis on the statistical and the on-site surveys, described that the hierarchy of central place in the Depok area is divided into three steps. First order of the central place is the convenience service centre. This can be found around the settlement area, which far from the traditional market. The centre is accessible by walking from / to the residence

area on a daily basis. The second order central place is the neighbourhood centre. It is usually called the traditional market and located at the important intersection of main roads. Its scale of activity depends on the population of hinterland; it usually consists of a short string of shop-houses along the main road. They are accessible by walking or by public transportation on a daily and monthly basis. The third order central place is the block centre, which can be designated as the city's new centre. It is located at the important main road and covering a few square kilometres with many commercial buildings and shopping malls, and also the bus and train terminals. This is a comprehensive and commercial areas which attracted various customers to fulfill all their needs, from the primary to the tertiary needs. The new area is closed to the University of Indonesia, about 15 minutes travel by public transportation. It has been indicated that the agglomeration process of economic activities occurs around the campus area.

The cost and time for the people travelling to the neighbourhood and block centres are significant. The settlement area along the main street (Jalan Margonda) is the area which indicates the lower cost and time to the block centre.

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Table 1. Percentage of Respondent to bought non-daily need in the shopping centre

Goods	In The Depok Area (%)*	Out of Depok Area (%)**
1. Clothing	63	96
2. Books & Stationary	20	0
3. Electronics	n.d.	94

Sources : \* Saraswati, 1991  
 \*\* Saraswati, 2000  
 n.d no data

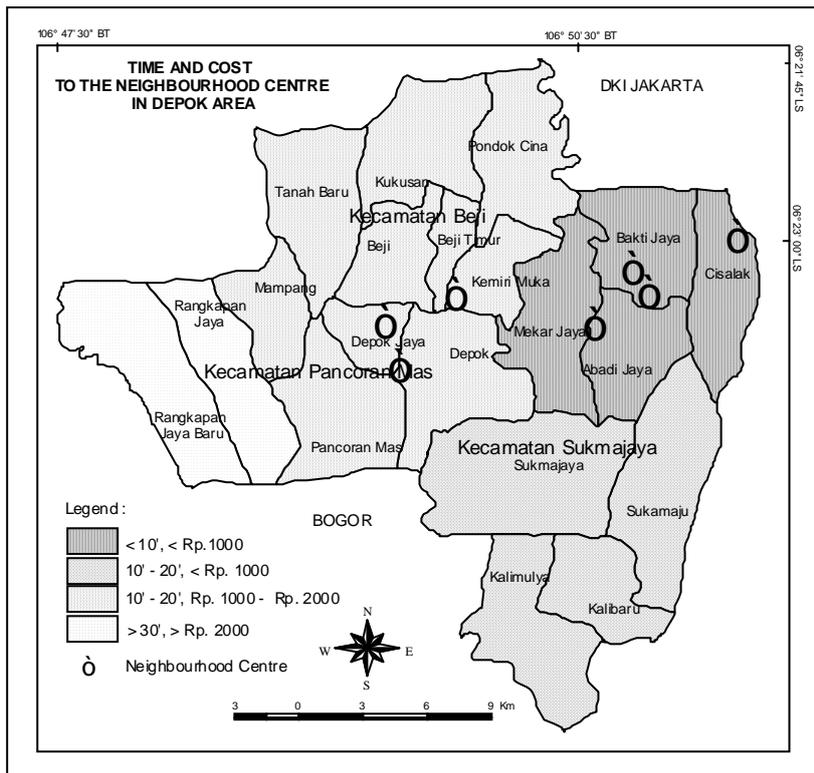


Figure 1. Time and Cost to the neighbourhood Centre in Depok Area

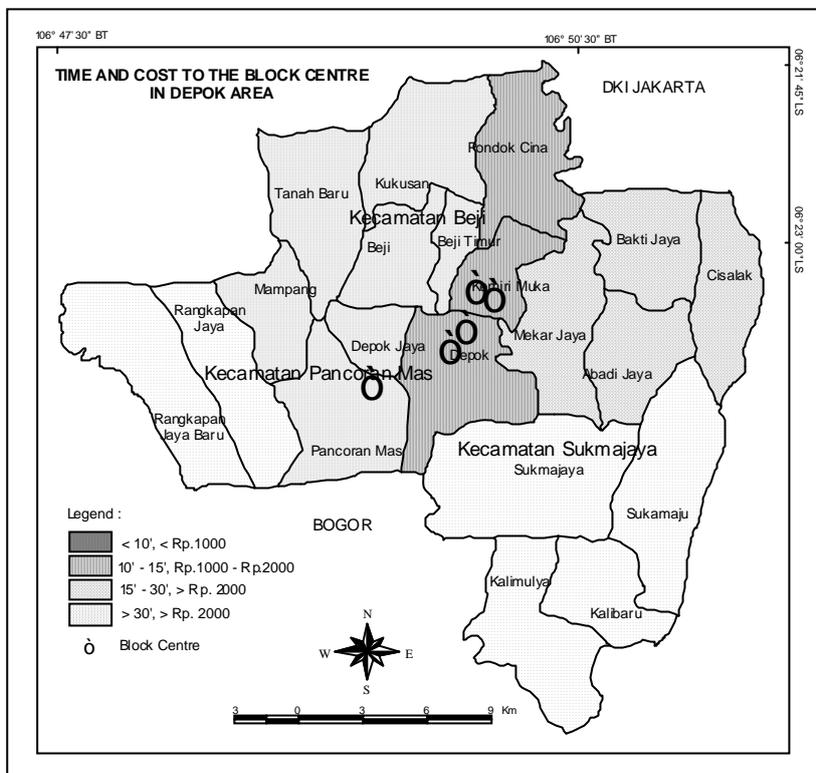


Figure 2. Time and Cost to the Block Centre in Depok Area