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## Transportation demand management: a park and ride system to reduce congestion in Palembang city Indonesia

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### Abstract

Park and Ride is one of Transport Demand Management (TDM) scheme, which is very popular in some congested city with wide parking area at the border line or outskirt area. Palembang is capital city of South Sumatera Province, which has three Terminals in the border area with surrounding kabupaten (district). Right now the Terminal is not functioned appropriately because many public transport vehicles are loading and unloading passengers outside the Terminal, or on the street nearby the Terminal. On the other hand, the city centre itself has been crowded of private vehicles (car and motor cycle). The current on street parking system has been no longer adequate. According to Cities Development Initiatives for Asia (CDIA) study 2011, about 1382 cars and 1431 motorcycles need a place to park in the city centre. The aims of this paper are to present the characteristics of trips surrounding the Terminal and to know their potential of accepting Park and Ride system, and to plan the program and policy regarding Park and Ride in Palembang. The Data was collected by doing Home Interview survey in Palembang, with 4000 sample of Households (Buchari, 2011). Method of Analysis is descriptive Analysis, Cross tabulation, matrices analysis and multimodal analysis. The data from previous study was used to analyze the interconnection Terminal location with trips from surrounding areas. The results showed the potential shifting from private vehicle user to park and ride user.

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*Keywords:* Park and Ride system; Transport Management Demand; Home Interview Survey

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### 1. Introduction

Palembang is the capital city of South Sumatera with the area of 369,22 km<sup>2</sup> consisting of 16 subdistricts

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(kecamatan), namely Kecamatan Alang-Alang Lebar, Kecamatan Bukit Kecil, Kecamatan Gandus, Kecamatan Ilir Barat I, Kecamatan Ilir Barat II, Kecamatan Ilir Timur I, Kecamatan Ilir Timur II, Kecamatan Kalidoni, Kecamatan Kemuning, Kecamatan Kertapati, Kecamatan Plaju, Kecamatan sako, Kecamatan Seberang Ulu I, Kecamatan Seberang Ulu II, Kecamatan Sematang Borang, and Kecamatan Sukarami. The city is also divided by Musi river into two parts, namely Ulu (upstream) part and Ilir (downstream) part.

Public Transport vehicles in Palembang consist of Oplets with 8 to 9 passengers seats and buses with 20 to 21 seats (29 including standing facilities). The number of Oplets seem to be excessive because they are left by their passengers and shifted to Ojek or other public transport modes. Like many cities in developing countries, Palembang also has congestion problems and excessive number of motorcycles. Some measures have been done to overcome congestion problems, but the problems remain. It is inevitable that Palembang have sustainable transport, such as Multimodal Public Transport (MMPT). Multimodal Public Transport (MMPT) is defined as a trip that consists of two or more transport modes which are combined and interconnected with a transfer point (Bovy 2002). By combining and integrating the public transport modes, it is expected that the travel time would be shortened. However, the multimodality of travel and the factors determining the Share of Multimodal Travel have not been discovered yet.

Park and Ride, according to Collin English Dictionary, is a transport system which is designed to encourage drivers to park their cars some distance away from a city centre, tourist attraction, etc, and complete their journey by public transport. It is one of Transport Demand management scheme, which is very popular in some congested city with wide parking area at the border line or outskirts area. Palembang has three Terminals in the border area with surrounding kabupaten (district) as it is explained in Fig. 1.

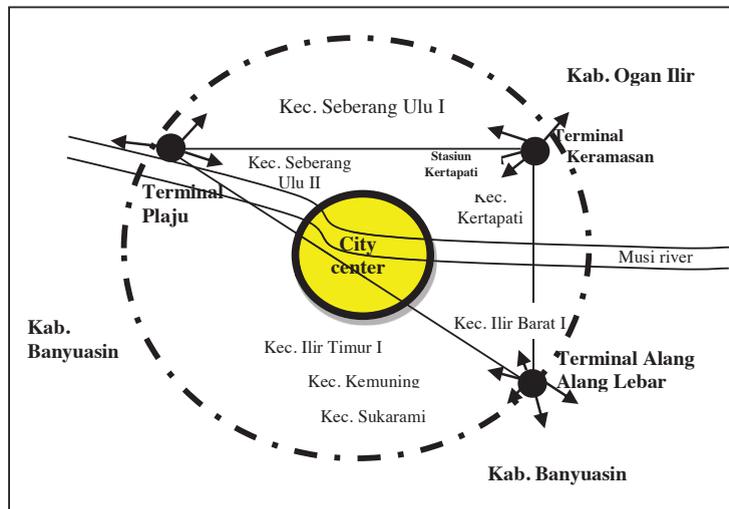


Fig 1: Sketch of Study Area

Right now the Terminal is not functioned properly because many public transport vehicles load and unload passengers outside the Terminal, or on the street nearby the Terminal. On the other hand, the city centre itself has been crowded of private vehicles (car and motor cycle). The current on street parking system has been no longer adequate. According to the study of Cities Development Initiatives for Asia in 2011, 1382 cars and 1431 motorcycles need a place to park in the city centre.

### 1.1. Problem Formulation

The problem formulated in this paper is:

1. How is the characteristics of trips around the Terminal and ?
2. How is the potential of accepting Park and Ride system?
3. How to make the program and policy regarding Park and Ride in Palembang?

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