Abstract: Different types of road-based public transportation vehicles can be observed in many developing nations of Southeast Asia. For example, Thailand has its “tuktuks”, Indonesia has its “bajajs” and “motos” or motorcycle taxis are familiar sight in Vietnam. In the Philippines, public utility jeepneys and tricycles are very popular. This study uses the concept of indigenous public transport modes. That is, low-occupancy, road-based motor vehicles and with unique design identifiable to its place of origin and sometimes have informal nature of operation. Thus, this paper aims to understand the different types of motor vehicles used as public transport service and in particular describe the indigenous modes by studying the public transportation system of Davao City, Philippines. A holistic planning and policy perspective is provided by understanding the history and role of different public transport modes thru its key stakeholders: government units, supply and demand using in-depth interviews and small-scale survey.

Key Words: road-based public transportation vehicles, indigenous modes, developing country

1. INTRODUCTION

In many developing nations in Southeast Asia, motor vehicles such as road-based public transportation mode are a familiar sight. They come in different size and forms like the motorcycle-based modes such as those of Thailand’s “tuktuks”, Indonesia’s “bajaj” and the “motos” of Vietnam and Cambodia. The Philippines is not exception since various design of different road-based public transport modes can be observed. There’s the “public utility jeepneys” or PUJs (four wheel vehicle that can sit 14-20 passengers), “tricycles” (motorcycles with attached side-cab), “skylab”(or motorcycles with wooden planks extension) and “pedicabs” (or bicycles with attached side-cab). These modes have been discussed either as intermediate motorized public transport (Iwata, 1995), paratransit (Grava, 2003) and informal
public transportation (Cervero, 2000). This paper uses the term “indigenous public transportation” to distinguish its uniqueness in terms of design to its country or place of origin and its use as a mainstream public transport mode. Basically, it is described as a public transport mode of paratransit origin and with less formal character compared to the traditionally accepted ones in developed countries like the buses and taxis.

In the face of transport advancement and drive towards sustainable transportation, the presence of indigenous motorized transportation modes in developing countries remains. In fact, this has been a subject of most planners and researchers in developing countries. In Vietnam and Thailand, motorcyles are used as for-hire local public transport mode also known as motorcycle taxis. It is also important to note that motorcycles account for half the vehicle fleet and up to 75% in some cities in Asia such as Hanoi, Vietnam (ASEAN, 2001).

In the case of the Philippines, the “public utility jeepneys” as well as the “tricycles” are recognized and accepted as local public transport mode in the national as well as local policies. The Philippines, an archipelago consisting of 7,101 islands in Southeast Asia enjoys a relatively high number of road-based public transport service compared to other developing nations. In fact, it has negligible presence in Malaysia and none at all in Vietnam (Figure 1). It is important to note that only the National Capital Region (NCR) or Metro Manila is the only area that enjoys the presence of rail-based mass public transport like the Light Rail Transit (LRT), and the Mass Rail Transit (MRT). The rest of the country depends on buses, taxis, mega-taxis such as van or FX-type taxis (a Toyota Motor Company brand type designed and marketed as utility vehicles), public utility jeepneys (PUJs), tricycles and in some cases, motorcycles for local public transport service.

![Figure 1. Motor vehicle trends in selected Southeast Asian Nations, 1999](image)

The presence of road-based public transport modes especially those described as “indigenous” can not be taken for granted. It is thus, important to understand the public transport system of developing nations from a holistic perspective by using a historical approach through reviewing documents of related data trends (when available) and policy as well as regulations taking into account the supply (public transport operators and drivers), demand (passengers) and the institutional component (national and local government). Rationally planning and regulating motor vehicles used as public transport mode in order to maximize its inherent economic advantages (in a sense that it will not need huge investment for infrastructure) vis-à-vis associated issues (such as informality, pollution, etc.) becomes more important.
This paper takes the case of Davao City, an emerging metropolitan area in Southern Philippines, a regional center and considered as a business, investment and tourism hub. Interestingly, the observed increasing presence of indigenous public transport modes in the city is contrary to what was actually envisioned 20 years ago in the recommended transportation system plan (DCUTCLUS, 1981) which was based from the very first person-trip survey conducted in the city.

The main goal is to trace and understand the presence and growth of motor vehicles used as public transport service and the associated public transport policies in Davao City, Philippines. Specifically, the objectives are as follows: 1) to show the presence and issues of different local public transport modes vis-à-vis the development of related policies at national and local level; 2) review city development plans and describe the available public transport modes in the study area; 3) investigate the supply-side component and 4) understand the demand component using preliminary results of small-scale person-trip survey in the study area.

In this paper, the motor vehicles used for public transport service is discussed by first presenting the different transport modes that make up the public transport system in the Philippines. A review of the history and institutional policy development with regards to public transportation and the current national transport action plan is presented. Finally a holistic approach is taken by considering the study area’s local government, supply and the demand-side component. This case study area is chosen since it is a residential area and the only route where all public transport modes are available. Issues and gaps in planning, policy formulation and implementation are noted and the role of motor vehicles and its innovation, referred as “indigenous” for public transport service in the city is described.

2. OVERVIEW OF THE LAND-BASED PUBLIC TRANSPORT SERVICES IN THE PHILIPPINES

In the 1900s, few motor vehicles were seen operating in the public highways in Manila and suburbs. As better means of transportation were invented and introduced in the country, the Filipinos gradually learned to use trucks, cars, jeeps and other types of vehicles. The country started undergoing rapid economic development in the 1950’s and early 1960’s and industrialization moved forward. As more roads were constructed, the growth in the number of vehicles increased (DOTC, 2006).

In this paper, the land-based public transportation is defined as transport services using overland modes on roads or on rail. It is classified into three (3) types of public transport modes: 1.) formal; 2.) indigenous and 3.) informal. The formal modes are the traditionally known mass public transport modes with the exception of taxis that are used for door-to-door services. These modes are divided into two groups: 1.) Rail-based (only found in Luzon, specifically the light rail and mass rail transit in Metro Manila) and 2.) Road-based public modes (buses, taxis) found all-over the country. This is followed by the indigenous modes (Figure 2) which are motor vehicles innovated for public transport use and were formerly outside the government planning and regulatory framework. But these were eventually accepted because of its proven service market niche. Its usage has been established through time and eventually become part of its transport culture. Its unique design is identifiable to its country of origin, such as Thailand’s “tuktuks” or Philippine Jeepneys. Some scholars have
used the term intermediate, paratransit, or informal transportation (Iwata, 1995, Grava, 2002, Cervero,2000). Lastly, there are informal modes (Figure 3) which are those motor vehicles that are considered illegal, not accepted in government regulatory framework and/or transport policies but are usually tolerated in some areas. It is said to be useful but illegal in some reports (PIA, 2004). A brief review of the different public transport modes found in the Philippines is presented in succeeding sections.

2.1. “Formal” Public Transport Service Modes

2.1.1. Philippine National Railways (PNR), Light Rapid Transit (LRT) and Mass Rapid Transit (MRT)

The Philippine National Railways (PNR) is a state-owned railway company under the DOTC. It operates around 1,060 km. route on the island of Luzon and before the 2nd World War provided prompt and regular public transport services running up north and south of Luzon. The pinnacle of Philippine passenger railway operations was reached during the late 1960 and early 1970s. After the major flood in 1975 that washed out the bridges east of Camalig, Bicol Region, trains from Manila were terminated. Following the suspension of services to Bicol region, buses increasingly took passengers away from PNR (DOTC, 2006). The Congress recently passed a bill to restore, rehabilitate and modernize old existing lines and extend service.

Unlike developed countries where mass public transport play a big role in development, PNR, LRT and MRTs are found only in Luzon and specifically, in the NCR. LRTs and MRTs were constructed in the 1990’s. The latter was under the Built-Operate-Transfer (BOT) scheme. This development is meant to alleviate the chronic traffic congestion experienced along the EDSA corridor.

2.1.2. Buses and Taxis

Buses are actually the very first mass public transportation by motor vehicle while taxis are traditionally used for door-to-door to services. The first public transport service was initially provided by the De Dios Transit Bus Corporation. Most of the bus office of operation is found in Metro Manila. In 1995, the government-owned bus company in the NCR, the Metro Manila Transit Corporation was privatized in line with the government’s thrust to transfer major public utilities to private sector (DOTC, 2006). And since then, the provisions of road-based public transport modes are given by private vehicle owners.

2.2. “Indigenous” Public Transport Modes

2.2.1. Public Utility Jeepneys (PUJs)

After World War 2, U.S soldiers left thousands of unserviceable jeeps. So then, Leonardo Sarao, an entrepreneurial Caviteño saw a business opportunity for mass transport. The jeep was then remodeled to increase its functionality by extending the body to accommodate at least twice the number of passengers and by putting some railings at the back and top for extra passengers to cling to, and still have some room for cargoes. In creating the jeepney, the Filipinos adopted and modified it to suit their own needs. And even if it faces competition from other innovations (like FX taxis) it remains popular in urban areas as well as in rural
areas where it can handle a muddy track with ease. It is known to be the poor man’s transport, versatile, durable and colorful reflecting a uniquely Asian country. At present, its engine is imported mostly from Japan, as “surplus” (or second-hand) but its body or chassis is designed by artistic Filipino auto builders who adorn it with variegated images. An average jeepney can normally sit 20 adult passengers. However, in remote rural areas where transport is scarce, it is typically overloaded. (University of Hawaii - Center for Southeast Asian Studies, 2006).

2.2.2. Philippine Tricycles

Tricycles replaced the “pedicabs” (basically a bicycle attached to a carriage made of tin or galvanized iron) in the late 1950’s. A tricycle is a motorcycle with attached colorful side-cabs. No other alterations were made to the motorcycle unit’s engine. Like the jeepneys in the 1970’s, the motorized tricycles were also given license. Licenses were issued at the national level registration system, formerly known as the Bureau of Transportation (BOT). They operated on local roads with neighboring areas offering local trips and feeder connections to buses and jeepneys. They were eventually removed in the main roads (except when no alternatives existed) since they did not mix with other vehicles due to its speed capabilities (cruising 20kph and maximum speed of 35kph) as well as having lower acceleration and has been cited as the cause of traffic delays and congestion (Guillen, 2004).

2.2.3. Filcab

Filcab, is a motor vehicle of asian utility vehicle (AUV) make which is operated as an ordinary or air-conditioned public transport service, with a fixed route or variable routes within specified areas and are usually found in the provinces (DOTC,2006).

2.3. Informal Public Transport Modes

2.3.1. Philippine Pedicabs

“Pedicabs” is actually a local term for bicycles with attached side-cars that serve as non-motorized taxis. It is actually a motorized tricycle, capable of carrying 2-3 passengers which re-appeared during the early 80’s at the height of oil crisis. Though not really favored by government officials and are not even covered by any national transport policies, pedicabs are popular feeder-modes in some residential areas. Regulations actually depend on the local government’s initiative.

2.3.2. The “Skylab” and “Habal-habal”

In some areas of the Philippines, other types of motorcycle-based other than tricycles can also
be found. Motorcycles are innovated to carry more passengers.

The “Skylab”

In some rural areas of the Philippines where there is bad road condition or no road at all, motorcycles are innovated to carry more passengers. Such is the case of “skylab”, a locally modified motorcycle which can accommodate an average of 8 passengers with their baggage. According to locals, it got its name from the observation that it looks like a “skylab” (the first U.S. space station) when seen from afar.

The “Habal-habal”

“Habal-habal” is a local dialect used to identify motorcycle taxis or motorcycles “for hire” which means to sit close to each other. Aside from driver, there are at least one to three passengers who sit behind the driver.

![Figure3. “Pedicabs”, “sky-lab” and “habal-habal” in Davao City (source: a. Motorbikers, 2005)](image)

3. PHILIPPINE TRANSPORT POLICIES AND INSTITUTION: HISTORY REVISITED

Policy and planning in the Philippines, including transport-related ones was traditionally highly centralized. Table 1 below gives an overview of history that make up the Philippine transport policies, related institution and its role:

<table>
<thead>
<tr>
<th>Year</th>
<th>Policy/Institution</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 1912</td>
<td>1st formal law on land transportation</td>
<td>Regulation and licensing</td>
</tr>
<tr>
<td>1913</td>
<td>Board of Public Utility Commissioners</td>
<td></td>
</tr>
<tr>
<td>1914</td>
<td>Public Utilities Commission</td>
<td>Automobile section</td>
</tr>
<tr>
<td>1947</td>
<td>Separate agency</td>
<td>Automobile section to Motor Vehicle Office (MVO)</td>
</tr>
<tr>
<td>1964</td>
<td>Republic Act No.4136 Land Transportation and Traffic Code</td>
<td>Land transportation laws compilation and creation of Land Transportation Commission (LTC) replacing MVO</td>
</tr>
<tr>
<td>1979</td>
<td>LTC was renamed as Bureau of Land Transportation (BLT) under the)</td>
<td>Still belonging to Ministry of Transportation and Communication (MOTC)</td>
</tr>
<tr>
<td>1985</td>
<td>BLT became LTC again</td>
<td></td>
</tr>
<tr>
<td>1986</td>
<td>People Power</td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>MOTC became Department of</td>
<td>Created Land Transport Office and</td>
</tr>
</tbody>
</table>
The present institutional structure (Figure 4) describes the regulation of motor vehicles, including the indigenous public transport modes. All vehicles are registered at the LTO and are classified according to use: (1) private, (2) for-hire, (3) government, (4) diplomatic. Moreover, they are sub-classified according to body configuration: weight, cubic displacement, number of cylinder and type of fuel used. As part of bureaucratic re-organization in 1986-87, franchising and regulatory functions were given to LTFRB and this is primarily an economic regulation combined with the policy that governed public transport service. The latter is based from the Public Service Act which states that consumers are protected and that public transport service is safe, efficient and affordable. LTFRB regulates all motor vehicle used for public transportation such as buses, mini-buses, jeepneys or public utility vehicles, taxis and mega-taxis. It issues, amends, revises or cancels Certificates of Public Convenience (CPC) or a certificate that serves as legal authority to which units can operate. It defines the obligations and responsibilities of the operator to the riding public and to the Board. It also defines the area/route the vehicle is authorized to operate and the validity or distance to which the vehicle is allowed to operate. Moreover, one of its functions is fare rate determination. At present, the Board adopted two methods in rate determination namely, the straight method and the add-on method. Add-on method is adding the established minimum fare as determined by the present oil price to the fare per succeeding kilometer multiplied by the distance traveled in excess of 4km and 5km respectively. The “straight” computation method is the process by which the actual distance traveled is multiplied by the authorized fare per succeeding kilometer as determined. Prior to Local Government Code of 1991, the tricycles were also covered by the LTFRB. However, unlike the other motor vehicles used for public transport where operations are usually inter-city or inter-municipality, the tricycles have been limited to certain areas. Compared with jeepneys or other high occupancy vehicle (HOV), tricycles operate on short-distance travel. When the devolution took place in 1992, only the regulation of tricycle operations was transferred to the local government units (LGU). The Office of Transportation Cooperatives (OTC) on the other hand, promotes the formation of cooperatives among transport providers.

Figure 4. Registration and regulatory framework for motor vehicles (MV) in the Philippines, (Guillen, 2004)
4. PHILIPPINE LAND TRANSPORT SECTOR: PRESENT ISSUES AND PLAN OF ACTIONS

The Philippines just like any developing nation is not exempt from challenges confronting the land transport sector. One of these is the government fiscal problem where in the current budgetary constraints of the government severely limits the type of assistance it can extend to the land transport sector. As previously mentioned, mass public transportation such as LRT and MRT can only be found in NCR. The latter was built under the Built-Operate-Transfer (BOT) scheme. The rest of the country depends on road-based vehicles especially public utility vehicles (PUVs) that come into different forms such as buses, taxis, PUJs, Filcabs and tricycles. There is also the issue of fluctuating oil prices and this is threatening the viability of the land transport sector which is heavily dependent on diesel and gasoline. Since the government can not afford to grant direct subsidies, the provision of public transport is privatized. Compared to other countries where the government or a few companies own and operate the bulk of PUVs, there is a widely dispersed and “democratic” ownership and privatized provision of public transport service in the Philippines. This system unfortunately is not free from some issues such as gap in policy and policy implementation. With the expected decline in government expenditure for new road construction, the country’s road network may not be able to cope with the growing number of vehicles using the roads. There is also the poor enforcement of traffic rules and continuing illegal operation of certain PUVs in certain areas. On the other hand, in more rural areas, there is a lack of public transport modes capable of plying in bad road conditions.

The government’s plan of action to meet the abovementioned challenges is to go for an environmentally sustainable land transport, taking into account the need for PUV modernization and rationalization, improved motor vehicle inspection program, clean emission clean air program and inter-modal terminal program (DOTC, 2005). Transport associations (which is one of the distinguishing characteristics of the indigenous and informal public transport modes in the Philippines), is encouraged to convert themselves into cooperatives to empower the organization and enhance access to credit facilities of government financial institutions. In order to achieve stability it operations, one of the features of registered transport cooperatives is to prohibit its members from participating in strikes and similar mass actions. The government also acknowledged the need to regulate the operations of new forms of land transport services that have evolved into unsafe vehicles and often than not fail roadworthy tests and standards. The case of motorcycle-based public transport modes is cited as it mutated into a mode which is dangerous and accident-prone transport services to meet the peculiar needs of commuters particularly in rugged and mountainous areas that are not serviced by any public transport modes. For example, “habal-habal” and “skylab” are popular alternative vehicles in some areas of Mindanao since it is the only mode capable of traversing poor road conditions in rural areas and the realization that they can also go thru busy intersection during peak hours.

5. THE CASE OF DAVAO CITY, PHILIPPINES
The City of Davao compared to Metro Manila and other metropolitan cities, is relatively young city. Having both urban and rural population, it tends to encounter problem ranging from lack of transport services to traffic congestion at the central business district (CBD). In urban areas, this is attributed to concentrated population and increasing motor vehicle ownership while in rural areas, the problem is due to poor road condition and road availability (Office of the City Planning and Development, 2002).

Davao City is in the southern part of the Philippines, specifically in Southern Mindanao and is 1 and 1/2 hours by plane from NCR. It is bounded by the province of Davao del Norte, Davao del Sur. Partly in the East, it faces the expanse of the Davao Gulf and the Island Garden City of Samal. It is considered to be the largest city in terms of land area at 2,443.61sq.km. It is divided into 3 congressional districts 180 barangays (the smallest political villages) and seven (7) distinct settlement areas namely; the Poblacion (CBD) Toril, Mintal, Calinan, Panacan, Tibungco, Bunawan, and Lasang. In addition, settlement areas are also developing in the districts of Marilog and Paquibato. The proposed plans being followed for each settlement areas are shown in the following (Figure 5):

![Figure 5. Spatial development plan of Davao City, (Office of Davao City Planning and Development, 2002)](image)

Almost 50% of the total land area is classified as timberland or forest. Agriculture utilizes about 43%. The present built-up area used for residential, institutional, commercial and industrial purposes represent about 10% of the total land area. The approve land-use plan built-up and settlement area is to cover 15% of the total land area. It is home to over a million people, with a growth rate of 2.83% and density of 540 persons per square kilometer. It has higher urban density however at 2,555 people per square kilometer. About 48% of total population is of working age.

Public transport is mainly served by road-based motor vehicles and is classified based on its registration as “for hire” vehicle at the LTO. The OTC, a support office under the DOTC, promotes transport cooperatives. Issuance on franchises and other applications for land transport operators as well as fare rates for buses and PUJs are made by the LTFRB thru its regional office. Regulation of tricycles was devolved upon the enactment of Local Government Code of 1991 to the local city LTFRB.

Road network and highway in Davao City are classified and maintained by hierarchical level:
the DPWH is in charge of national road (260km), the office of the City Engineer (local government unit) is in-charge of the city roads (626km) and the city government and respective barangays maintain the baranggay roads (839.7km). Moreover, there have been an increasing number utility vehicles (including jeepneys) and motorcycles as shown in the following (Figure 6):

![Figure 6. Number of MV in Davao City from 1990-2000(LTO,2004)](image)

5.1. **A Look at the Local Public Transport System in Davao City**

The different public transport modes servicing the city are the buses, PUJs, taxis, tricycles and habal-habal (motorcycle taxis). Provincial buses are not allowed to operate within CBDs and have to utilize the government operated terminals (Davao City Overland Transport Terminal and Agdao Terminal) and some privately operated ones. Moreover, there are vans (also known as mega-taxis) for trips more than 30kms and areas or provinces outside Davao City and can sit from 10-12 passengers. There is only one city bus route operating from CBD to Calinan area which is actually planned to be the new center for agri-based industrial place. It is strategically located within the productive agricultural areas of the city. Tricycles as well as pedicabs (only in some areas) service the interiors of residential areas and minor roads and are banned in traversing along major roads and highways. Its regulation is under the Office of the City government’s localized LTFRB. Habal-habal can also be observed in city outskirts but are considered illegal.

The following (Table 2) shows the public transport system in Davao City which ranges from the formal (buses, taxis, mega-taxis or vans), indigenous (PUJs, tricycles) and informal (habal-habal) as well as the number of operators, drivers and their estimated average income.

<table>
<thead>
<tr>
<th>Public Transport</th>
<th>Nos. of Passengers</th>
<th>Fare structure a</th>
<th>Nos. of Franchise</th>
<th>No. of units</th>
<th>Drivers’ Estimated average income b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>60</td>
<td>PhP7.50+2/km</td>
<td>1*</td>
<td>12</td>
<td>PhP608.40</td>
</tr>
<tr>
<td>Taxi</td>
<td>14-18</td>
<td>PhP7.00+2/km</td>
<td>2320</td>
<td>3988</td>
<td>PhP273.00</td>
</tr>
<tr>
<td>PUJ</td>
<td>14-18</td>
<td>PhP7.00/2/km</td>
<td>8658</td>
<td>10,591</td>
<td>PhP295.00</td>
</tr>
<tr>
<td>Tricycles</td>
<td>2-5</td>
<td>PhP5.00</td>
<td>907</td>
<td>1,019</td>
<td>PhP225.00</td>
</tr>
<tr>
<td>Habal-habal</td>
<td>2-4</td>
<td>PhP5.00</td>
<td>NA</td>
<td>NA</td>
<td>PhP208.00</td>
</tr>
</tbody>
</table>

Table 2. Public Transportation Modes Available for trips around Davao City, 2006
5.2. Local transport policy and implementing units of Davao City

There are two major organizations tasked in overseeing and managing the traffic situation especially at the CBD area, namely: the Traffic Management and Control Board (TMCB) and the Traffic Management Center (TMC).

The TMCB was created by Executive Order No. 15 Series of 1988 was an institutional response to Davao City's growing vehicular and pedestrian traffic arising from street congestion and obstructions to ensure public order and safety.

The 1994 amendment prompted the creation of the TMC under the immediate and direct supervision of the Board to assist it in the performance of its functions and related sectoral concerns, as well as render and provided technical services including secretariat work for the Board. It is lodged and/or stationed in the Office of the City Planning and Development Coordinator. The office head is the designated Project Coordinator of the Unit. The office is closely assisted by the following offices: (a) City Engineer's Office, b) LTO, regional office (c) Department of Public Works and Highways (DPWH), Regional and District Offices, (d) Metropolitan District Command (METRODISCOM) Traffic Bureau, (e) Highway Patrol Group, (f) City Mayor's Office.

The Amended Executive Order on the TMCB also mandated the formation of sectoral or functional sub-units in the field of (a) Planning and Engineering, (b) education, (c) enforcement, and (d)such other sectoral concerns as the Board may deem fit and adequate to achieve its targets and concerns.

It was in 1994 when the city's "Hapsay Dalan" Project which was considered an epitome of fine transportation planning was institutionalized through the Sanggunian Panlungsod Resolution 789. The Operation Hapsay Dalan Committee is to monitor the management of traffic experiments being conducted by the Traffic Division along main streets.

One other mandate of the TMCB was to "promptly undertake a vigorous, multi-sectoral education and information campaign of all relevant information relative to any transport and traffic innovations and related activities".

5.3. Review of Past Studies in Davao City

Interestingly, a land use and transport study conducted in 1979, predicted an increase of public transport demand by 2.6 times in terms of number of passengers and 3.8 times in terms of passenger-kilometer by year 2000. This is to be attributed to the expansion of Davao City’s urban scale and recommended the development of city bus service as major means of urban transportation. This is supposed to be used as the basis for the development of rail transit.

Historically, bus service were the first pre-war public transport use and it was operated by the Davao Auto Bus Company with two standard size buses running in shuttle around the city.
No bus stops existed before and passengers can get at any point on the route. It was actually driven out of business by “auto-calesas” (ACs) or motorized calesas in 1951. The word “calesa” refers to the 2 passenger horse carriages which were imported from Europe, during Spanish rule. They look like mini-jeepneys and its service routes are designated and limited to the City boundary of Davao. ACs is engaged in short distance transportation within the downtown area and performs function in the CBD. It was reported that in the 1960’s, a large number of ACs were brought to Davao from Cebu City, where ACs were banned in an attempt to achieve coercive replacement of ACs with PUJs. ACs population stated to decrease in the 1970’s and was replaced by the PUJs. Tricycles, on that other hand replaced “pedicabs” in the 1950s and were revived in the 1980s at the time of oil crisis in the region.

6. UNDERSTANDING THE ROAD-BASED PUBLIC TRANSPORT SERVICE ITS OWNERS/DRIVERS AND THE PUBLIC TRANSPORT USERS

It is interesting to note that while the very first comprehensive development plan of Davao City proposed the improvement of city bus services, the present situation based on the ocular inspection, shows otherwise. The route along CBD-Mintal-Calinan area is used as study area for the small-scale person-trip survey located along the route in order to explore the demand-side perspective (Fig.7). This is where all the public transport modes for city travel are available in terms of public transport supply.

This is the only route in Davao City where there is city buses as well as “habal-habal” or motorcycle taxis for public transport service available for commuters living in the vicinity and covers three of the seven distinct settlement of the city. The city bus terminal is located in the CBD and in the Calinan area. This case study only covers the public transport modes available for short to medium haul travel. It does not include public transport modes used for long haul trips or trips outside Davao City.

Figure 7. CBD-Mintal-Calinan Study Area, Office of Davao City Planning and Development, 2002


Ocular inspection and in-depth interviews with public transport association in the area were
conducted. Figure 7 shows where the terminals and stops of each public transport modes are located. Previous study revealed that “habal-habal” or motorcycle taxis in the area emerged when campaign against tricyboats (or motorized “pedicabs” using general purpose engines) was intensified and in some areas, where no other public transport modes which are really capable of providing transport service due to bad roads. Some baranggay roads in the area are poorly maintained that even PUJs drivers do not want to provide service. The following (Table 2) shows the number of operators/drivers and estimated number of units servicing the area, with the PUJs and tricycles having the biggest share in terms of public transport supply.

Table 2. Public Transport Service Available in the case study area

<table>
<thead>
<tr>
<th>Mode</th>
<th>Estimated Nos. of Units</th>
<th>Owner/Association</th>
<th>Drivers/operators -driver members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>12</td>
<td>Annil Bus Transit</td>
<td>24</td>
</tr>
<tr>
<td>PUJ</td>
<td>100-110</td>
<td>1.Tagakpan Driver’s Association</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.CalinanDrivers/operators’ association</td>
<td></td>
</tr>
<tr>
<td>Taxi</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Tricycles</td>
<td>40-45</td>
<td>GMSTODA</td>
<td>90</td>
</tr>
<tr>
<td>Habal-habal</td>
<td>65</td>
<td>1.Golden Showers’ Drivers Association</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.SMPP</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ ocular and operator/driver’s association interview survey, Feb.2006

In terms of understanding the situation of public transport service operators/drivers in the case study area, following information were revealed;

Table 3. Public Transport Service Operator/Driver and Vehicle Situation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Ave.Veh.Age (In years)</th>
<th>Service Freq. (Ave.trip per day)</th>
<th>Operation Schedule (In military time)</th>
<th>Ave.Driver’s age (In Years)</th>
<th>Ave.Driving Experience (In Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUB</td>
<td>12</td>
<td>8.4</td>
<td>6-23, 7-20</td>
<td>53.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Taxi</td>
<td>5.3</td>
<td>7.8</td>
<td>7-22</td>
<td>41.67</td>
<td>5</td>
</tr>
<tr>
<td>PUJ</td>
<td>7.4</td>
<td>8</td>
<td>6-20</td>
<td>46.25</td>
<td>23</td>
</tr>
<tr>
<td>Tricycles</td>
<td>2.3</td>
<td>10</td>
<td>6-20</td>
<td>41.75</td>
<td>5.5</td>
</tr>
<tr>
<td>MC Taxi</td>
<td>2.5</td>
<td>22</td>
<td>7-19</td>
<td>20.4</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Note: n=nos. of drivers; nbus=5; ntaxi=4; nPUJ=7; ntricycle=8, nMCTaxi=8
Source: Authors’ ocular public transport service driver’s survey, Feb.2006

With the exception of the taxis, PUBs, PUJs, tricycle and MC taxis have strong public transport associations. However, the transport association of PUJs, tricycles and MC taxis include that of the operators/owners and drivers. Providing internal policies about its operation such as making sure that there are equal opportunities in soliciting passengers as well as ensuring discipline among its members is one of its major roles in the business. Likewise, it is the transport association’s support mechanism and is used in policy advocacy eg. Fare hike etc.

Moreover, except for the buses, the average daily income of drivers along this route falls within the average daily minimum wage in the City which is PhP 250. The average daily cost
of living for a family of six is around PhP 400-500 (Ibon Foundation, 2003). Average household size of a public transport driver is around 4.03.

With regards to the working condition, most of the drivers are members of the transport association and work on extended working hours on the road averaging around 12-16 hours per day, 6 days a week when the Philippine Labor standard is 8 hours per day, 5 days a week.

Except for one MC taxi driver interviewed, almost all hold valid driver’s license. As shown in table 3, the more formal the public transport mode is, the more experience the drivers are.

6.2. Demand Component: The Case of Green Meadows Village, Sto. Nino, Davao City

Green Meadows Village is a privately developed residential area with 1,360 housing units of mostly single-detached houses, of which an estimated 60% is occupied by households belonging to the middle-class income bracket. It is the biggest housing complex among the three (3) residential areas in Barangay Sto. Nino and is around 20km from the CBD and 10km from Calinan.

A small-scale person-trip survey was done at random to 10% of the household population. While this is not comparable to that of the 1979 Davao City wide person-trip survey, the survey results provided a glimpse of the average middle-class present situation in terms of trip demand through the modal share, trip composition and trip length.

Figures 8 and 9 below showed that trip and modal split composition in terms of trip purpose.

![Figure 8. Green Meadows Village (study area) Trip Composition](image)

![Figure 9. Davao City Trip Composition, 1979](image)

Note: MC (motorcycle) PMV (private motor vehicle/car)

Based from the ocular inspection, there are no AC (auto-calesa) modes operating in the City. The figures above revealed there are no big changes in terms of the use of motor vehicles for public transport service. However, the change is in the type of available public transport mode use such as AC in 1979 which as observed and based from the authors’ survey and ocular inspection in 2006 was replaced by the MC taxis.

The 1979 Davao City Study recommended the implementation of city buses. The projected
modal share by trip length is shown in Figure 10. However, the present situation would show that this was not followed at all and this is reflected in the small-scale survey as shown in Figure 11.

Figure 10. Green Meadows Village Modal share (%) of public transport mode per trip length, Guillen et al., 2006

Figure 11. Davao City Projected modal share (%) of public transport mode in 2000 by trip length, DCUTCLUS, 1981

The preliminary findings show that PUJs are still the most common form of public transport used by residents of the area. Interestingly, as shown in Figure 8, there is an almost equal share of tricycle, PUJ and MC taxi or “habal-habal” use. In fact, the latter is mostly used for going to school and/or when the purpose is for socializing. It is also important to note that MC taxi is mostly used for short-distance travel (Figure 10). Ironically, the bus shows a very low trip usage and can be assume that this has something to do with frequency as very few buses (only 12 buses) plying in this area. In a way, the presence of different types of motor vehicles use for public transport service provides users more options to use in their travels.

7. CONCLUDING REMARKS

This paper presented the different road-based public transportation modes found in the Philippines. In this case, indigenous public transportation modes is defined as those with unique features of paratransit character, having small-scale business level of private ownership which provides the general public a legally accepted public transport service. It provides a general historical account on how certain motor vehicles are innovated for public transport use and eventually regulated by government as soon as service markets were clearly established as exemplified by the history of PUJs and tricycles. A brief regulatory framework is also presented in order to understand the policy and planning process involved in making the privatization of road-based public transport system works. The case of Davao City is presented in order to show a holistic perspective by showing the role/function of the different stakeholders; local government unit, supply and demand. It presented how certain policy which is meant to improve to system actually contributed to the growth of some informal modes (eg. moratorium on the issuance of public transport franchise). Based on the ocular inspection and in-depth interview by the authors in 2006, it described the public transport supply, the role of transport associations and livelihood that operator/driver gets from it as well as the issues they faced (eg. labor standards etc.). Likewise, the small-scale person-trip survey held in the same period provided an idea on how useful and how competitive each
public transport mode is.

In the future, detailed trip demand analysis at a large-scale given the projected development in the area must be considered in order to give better recommendation. More over, at the national and local level, socio-economic and political situation as well as past and present policies must not be overlooked.

REFERENCES


