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Is the use of informal public transport modes in developing countries habitual? An empirical study in Davao City, Philippines

Marie Danielle Guillen^{a,*}, Haruo Ishida^b, Naohisa Okamoto^b^a School of Government and School of Social Sciences, Ateneo de Manila University, Katipunan Avenue, Loyola Heights, Quezon City, 1108, Philippines^b Faculty of Engineering, Information and Systems, University of Tsukuba, Tennodai 1-1-1, Tsukuba, Ibaraki 3058573, Japan

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ABSTRACT

The presence of unique kinds of public transportation often described as informal characterizes many cities in developing countries. As often noted, people in the lower income categories are usually the ones who rely on informal public transport services. In the Philippines, one can observe that an average Filipino uses door-to-door transport services regularly. This starts from stepping out of the house, walking several paces (if at all), hailing a “pedicab” (bicycle with a side-cab) or tricycle (motorcycle with side-cab), to riding a public utility jeepney (PUJs) or bus, getting-off, hopping on to another “pedicab or “tricycle”, and getting transported right to the door of final destination. Using Davao City, Philippines as the case study area, the paper tries to explore the concept of habit and dependency on the different road-based public transport modes based on both theories of rational behavior and planned behavior. Empirical results using structural analysis show the strong public transport dependency to PUJs and tricycles where half of the household population have vehicles. It confirms the role of rational behavior where socio-economic factors affect modal decision. Likewise, the study also shows interesting findings wherein the quality of service evaluation played a direct role in the perceived dependency to formal modes (buses, taxis) and informal mode (such as motorcycle taxis or MC taxis) but an indirect role in the actual use of the mode. The study shows the relationship of perceived reliance *vis-à-vis* trip recall using indigenous modes (PUJs, tricycles) and supports the theory that suggests the role of habits and “mere exposure” effect. As noted in many related studies, it is not easy to alter habits. This indicator is validated by the actual use of public transport modes especially tricycles and MC taxis for short-distance trips as well as how one views own dependency *vis-à-vis* how the same individual sees his/her household and community dependency to a certain public transport mode. These findings suggest the need to understand Filipino commuter’s psychology and a careful review and understanding of the concept of sustainability, infrastructure needs, seamless multi-modal connections and over-all quality of service given limited economic support in a context of an emerging city in a developing country.

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1. Introduction

Unique types of public transport mode usually represent the public transportation system in developing Asian countries. For instance, “motos” (or motorcycle taxis) are popular in Viet Nam while in Thailand “tuktuks” (motorcycle with attached cabs) are quite ordinary. “Public Utility Jeepneys” (PUJs) are a common sight in the Philippines. The cities and towns in developing nations are usually heavily dependent on these road-based public transport modes for their mobility. Often, described as informal public transport modes, they are known to play a major role in meeting the travel needs of the poor.

The case of the Philippines is not an exception. One can easily observe the supportive and spoiling role of informal public transport services. In terms of employment, about two million Filipinos are in the transport industry. It ranks second only to trade as the biggest provider of jobs in the service sector (NSCB, 2007). Its variations and innovations to accommodate commuters’ penchant for door-to-door services can be very fascinating. The usual assumption is that public transport dependency on a certain mode (particularly the informal modes) in developing countries is due to the lack of modal choice and that the transport fare is cheap when compared to others. Engineers and economists usually attribute this act to the theory of rational behavior. On the other hand, psychologists and social scientists usually provide the theory of planned behavior or habits, as an alternative explanation. In this paper, the latter offers complementary theoretical basis to understand the case of public transport dependency and

* Corresponding author. Tel./fax: + 63 2 929 7035.

E-mail address: danielle.guillen@gmail.com (M.D. Guillen).

understand if the case of habitual informal public transport use exist taking into account the demand structure of a developing country like the Philippines.

To date, most of the studies in developing nations are usually about the important role informal public transport services provide for the poor. Some anecdotal references showed that low-income groups are prepared to pay a premium fare to ride regular mini-bus when faced with irregular overcrowded bus (Allport, 2000). However, there is conflicting evidence as to whether or not the poor spend a higher proportion of their income on transport than other groups (Kranton, 1991). Moreover, it is difficult to find studies on how other social income groups in developing countries view their public transport dependency. Some of the studies that explored the concept of dependency focused on private vehicles like cars (Wicham, 1999) or on the efforts to shift from automobile dependency to public transport vehicle (Taniguchi and Fujii, 2007; Taniguchi, et al., 2005). Recent pioneers of this type of studies were based on psychological perspective such as the role of habit in behaviour prediction (Verplanken and Wood, 2006; Aarts and Ap, 2000, Fujii and Garling, 2003, and Taniguchi et al., 2005) and were mostly based on case studies done in Europe and in Japan. These studies generally assessed automobile dependency and offered new insights on mobility management. It is important to note what these studies often highlighted. Some of these studies noted the related environmental issues. Others highlighted the mobility needs of the elderly. Many of the studies in the United States were about travel-related attitudinal, personality and lifestyle cluster studies that characterized individuals' personalities with their mobility and related the findings to automobile dependency (Redmond, 2000; Mokhtarian et al., 2001).

In developing countries, there were various anecdotal studies about informal public transport modes that addressed issues of public safety and welfare (congestion and accidents) and environmental problems (air pollution). Some presented its complementary (feeder) mode role based on cost, adaptability and market responsiveness (Cervero, 2000; Guillen, 2008; Iwata, 1995; Ocampo, 1982). There was also an earlier initiative on incorporating the effect of perception and feeling variables on mode choice behavior such as a study in Metro Manila, Philippines which showed that objective explanatory variables were more powerful than subjective ones and that those precise measured Level of Service (LOS) variables could yield better model estimations. It suggested that disaggregate logit mode could be more powerful in explaining mode choice behavior (Ishida and Kurokawa, 1991). A recent study in Indonesia, also showed some important factors and attributes to explain users' perceptions and priorities regarding transport service and suggested the likely continuation of using paratransit (another term used to describe informal modes and/or low occupancy public transport modes) despite their dissatisfaction with several of its aspects. Most of the users are dissatisfied with several of the informal public transport service aspects and yet they are loyal users (Tri and Kubota, 2007). While these studies look at the attributes (quality of service of these modes) that users are generally not happy with, it did not capture the gaps of the respondents' actual *vis-à-vis* the cognitive behavior, and the respondents' personal perception in relation to his or her own household and community. In the case of the Philippines, even the government acknowledged that public utility jeepneys (PUJs) and tricycles compete quite strongly with other forms of transport (DOTC, 2006) or, if not, play a complementary role to other available forms of public transportation. Other examples included a study on informal public transport modes like tricycle and motorcycle taxis (MC taxi), more popularly known as "habal-habal" that concluded their appropriateness as public transport in some areas of the Philippines like Siquijor Province (Rahman, 2007). However, these reports and studies may unknowingly overlook the related quality of service issues like safety. It did not particularly look at how the respondent viewed the role of available public transport modes in the community. It may be

Table 1

Classification of road-based public transport service in the Philippines.

General category	Local category	Mode	Legal	Supply (labor activity)
Formal	Formal	Bus	Accepted	Privately operated, management, drivers and conductors are considered in the employment sector
		Taxi	Accepted	
Informal	Indigenous	PUJ	Accepted	Privately operated, small scale enterprise, usually the owners is also the driver, considered informal employment since they are not necessarily included in the employment sector records
	Illegal	Tricycles MC taxi	Accepted Not accepted, but motorcycles are registered	

Note: PUJ (Philippine Utility Jeepney); MC (Motorcycle) taxi.

useful but the individual may not necessarily think that his/her household or community depends on it.

There is a common assumption that informal public transport exists because the public has no other option for mobility and that it is cheaper to use than formal public transport mode. However, it is important to note that the context of "public service" in the Philippine road-based transport sector may be a little different. Literally, these commonly referred informal modes provide service to the public are subject to government regulatory functions even if private individuals hold the operation. Thus, in order to understand the public transport sector in an emerging city of a developing country, this paper uses the formal-informal dichotomy (Cervero, 2000) in categorizing the available road-based public transport services. Based on this, three classifications were made: (1) formal modes defined as the traditional, technically and legally accepted like the bus and taxis, (2) indigenous modes described as a domestic innovation and legally accepted (PUJs, tricycles) and the (3) informal modes or those modes that are not technically and legally-accepted such as the MC taxis.

Table 1 shows the categories used in describing the road-based public transport service. This paper uses two major categories: formal and informal. The latter includes the indigenous and illegal modes. The legal and labor activity components were the basis for these categories. For this paper, there were three subcategories: formal public transport service (bus, taxi), indigenous public transport service (PUJs, tricycles) and informal (MC taxi).

The need to understand informal public transport modes, what really drives people to use it and the need to rationally plan for and regulate them in order to maximize their inherent psychosocial and economic advantages as well as understand the associated issues *vis-à-vis* the formal public transport were the motivations for this paper.

1.1. Objectives of the study

In general, this paper tries to understand the public transport demand structure in an emerging metropolitan city of a developing country. Observation of habitual public transport use where commuters prefer PUJs instead of the bus despite the similar fare price per distance as well as the uncommon sight of using bicycle for

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