A STUDY ON THE TRIP GENERATION CHARACTERISTICS OF BUSINESS PROCESS OUTSOURCING (BPO) COMPANIES IN THE PHILIPPINES

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Abstract: This study focuses on the trip generation characteristics of business process outsourcing (BPO) companies in the Philippines. Business process outsourcing is a rapidly growing industry and as such, has spawned land use that has significant differences in trip generation characteristics from traditional offices. Travel demand characteristics for BPOs, for example, are quite different because of the unusual nature of operation of such companies due to the varying times in countries served by employees. Many BPOs were initially located in central business districts in Philippine cities. However, as the demand for BPOs continue to increase, offices have been established away from the urban areas at business and industrial parks. The paper examines the characteristics of BPO trip generation. It presents the formulation of strategies to address problems pertaining to transport demand as well as the provision of facilities to accommodate the continued growth of the industry.

Key words: trip generation, business process outsourcing

1. INTRODUCTION

Trip generation rates are fundamental inputs to transportation engineering and planning analysis. Trip generation refers to the number of trips produced and attracted by a facility or land use. These rates are developed based on the characteristics of various facilities and land uses taking into consideration the nature of their operation. Thus, a school will have different values for trip generation as compared with an office building throughout a typical weekday or weekend. As essential inputs to planning and design of transport facilities, it is imperative that the rates used be reliable if not exactly accurate.

Office land uses have generally contributed to traffic congestion experienced at typical peak periods during the day. Offices generate trips that are distributed unto the private and public transportation. Trips generated are comprised of trips produced (from the office to other land uses) and trips attracted (from other land uses to the office). Typical office trip attraction is expected to peak in the A.M. period while trip production peaks in the P.M. period. Trip production and attraction among different land uses are illustrated in Figure 1.
Trips will always have origins and destinations. A common origin – destination pair is that between residential areas and offices, where the typical trip purposes are “to work” (origin is home and destination is office) and “to home” (origin is office and destination is home). This paper focuses on a type of office that has unique attributes, among them its operational characteristics that translate to the travel demand features of trip makers.

Business process outsourcing (BPO) has been a steadily increasing trend for many companies in the developed countries. Large companies like multinationals and especially those dealing with technology have engaged in outsourcing many of their functions to entities in developing countries. This was done primarily in an effort to cut costs while retaining the quality of services that they provide. Among these functions are technical support and transcription services that require staff working round-the-clock, 24/7.

In the succeeding sections, the characteristics of business process outsourcing companies are examined. These characteristics provide a clear picture of trip-making characteristics of the employees, who comprise the bulk of trips generated by the BPOs. Subsequently, understanding BPO company trip characteristics will pave the way for addressing the travel needs of this sector.

2. TRIP GENERATION OF TYPICAL OFFICE LAND USES

The Institute of Transportation Engineers (ITE) has defined several classifications under the office category. These include general office, government office, medical office, and high tech office. Trip generation rates are given in terms of vehicle trips per day or vehicle trips per hour. The following tables list typical trip generation rates for the office types mentioned. “In” refers to incoming trips (trips attracted) and “out” refers to outgoing trips (trips produced).
Table 1 Trip generation for a general office

<table>
<thead>
<tr>
<th>A.M. Peak</th>
<th>P.M. Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>0.019</td>
<td>0.002</td>
</tr>
<tr>
<td>0.430</td>
<td>0.050</td>
</tr>
<tr>
<td>48.086</td>
<td>6.449</td>
</tr>
</tbody>
</table>

(Unit: Vehicle trips per hour per square meter GLA)

Table 2 Trip generation for a medical office

<table>
<thead>
<tr>
<th>A.M. Peak</th>
<th>P.M. Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td>0.180</td>
<td>0.060</td>
</tr>
<tr>
<td>247.100</td>
<td>82.358</td>
</tr>
</tbody>
</table>

(Unit: Vehicle trips per hour per square meter GLA)

Table 3 Trip generation for a high tech office

<table>
<thead>
<tr>
<th>A.M. Peak</th>
<th>P.M. Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>In</td>
<td>Out</td>
</tr>
<tr>
<td>0.015</td>
<td>0.001</td>
</tr>
<tr>
<td>0.530</td>
<td>0.040</td>
</tr>
<tr>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

(Unit: Vehicle trips per hour per square meter GLA)

Table 4 Trip generation for a government office

<table>
<thead>
<tr>
<th>Trips generated</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.729</td>
<td>Vehicle trips per day per square meter GLA</td>
</tr>
<tr>
<td>11.950</td>
<td>Vehicle trips per day per employee</td>
</tr>
<tr>
<td>163.704</td>
<td>Vehicle trips per day per hectare</td>
</tr>
</tbody>
</table>

(Unit: Vehicle trips per day per square meter GLA)

The trip generation of typical offices (Table 1) influences peak hour traffic. Peak generation (i.e., production and attraction) coincide with morning and afternoon peak periods. Office trip attraction affects the morning peak while production affects the afternoon or evening peak.

Medical offices (Table 2) attract and produce trips after the morning peak period (i.e., after 9:00 A.M.) and would generally have significant impacts on afternoon peak periods. Note that these offices are often referred to as clinics and should be treated differently from hospitals.
High tech offices (Table 3) have similar characteristics as typical offices. Slightly lower trip generation rates may be attributed to the automation of office processes. Automation contributes to the reduction of trips during the day.

Government offices (Table 4) have some similarity in trip generation characteristics as typical offices in as far as its employees are concerned. Note, however, that in addition to such trip generation, government offices provide various services and are visited by many people for various transactions. Such characteristic translates into significantly higher trip generation rates that generally cannot be associated with the typical AM and PM peak periods. As such, trip generation rates of government offices are most readily available on a per day basis.

Despite this wealth of information on typical office trip generation, their applicability to BPO companies are limited. This limitation is due to the longer or odd hours of operation by BPO companies. Their operations might actually resemble the trip generation characteristics of factories or industries that involve shifting over 24 hours. However, unlike factories, there is minimal freight trip generation for BPO companies. Thus, it is necessary to first understand the attributes of BPO operation and then examine their trip generation characteristics.

3. TRIP CHARACTERISTICS OF BPO COMPANIES

A survey was conducted to establish the basic characteristics of business process outsourcing companies throughout Metro Manila. Target areas included locations in Quezon City, Makati City, Pasig City, Mandaluyong City and Taguig City. A questionnaire form was developed for this purpose and is shown in Figure 2. The questionnaire included items such as the number of employees, the area or space occupied by the company, accessibility, and typical work periods. The last would help establish the shifting of employees throughout the day, thereby identifying the critical periods when trip production and attraction will peak. A total of 30 companies were sent the basic survey questionnaire via facsimile or electronic mail.

It was found that about 90% of BPO employees take public transportation. These practically comprise the entire workforce of BPOs since the remaining 10% represent the management of the companies. Such characteristic underlines the importance of addressing transport needs – especially public transportation.

Most BPOs operate on a 24/7 basis and generally have 3 shifts overlapping with each other to provide continuity in the services that they provide. BPOs operating shifts that coincide with typical office hours (e.g., 8:00 A.M. to 5:00 P.M.) would have similar trip generation characteristics as regular offices. However, these offices will produce and attract practically the same number of people for other shifts. While traffic along adjacent streets may be significantly lower that the A.M. and P.M. peak periods as well as the daytime in general, it does not necessarily mean that the traffic generated will not be significant.

The critical periods are when shifts change; when private transport trips departing the office coincide with trips arriving, thereby producing traffic congestion along streets and intersections in the office building’s impact area. Such congestion may be experienced specifically along adjacent streets especially where driveways of office parking facilities are located. Public transport trips also influence traffic as public transport vehicles (e.g., buses, jeepneys and taxis) stop in front of or near office buildings to load and unload passengers, even when there are designated stops in the vicinity.
4. TRANSPORTATION REQUIREMENTS

Due to the nature of BPOs, these offices are manpower intensive and it has been established that most employees use public transportation. Access to public transport services is not generally a problem from 5:00 A.M. until the late hours of the night since most public transport modes in Metro Manila and other major cities in the Philippines are in operation during this period. However, employees working during other shifts or schedules may experience difficulties in commuting as rail transport and van-for-hire service (i.e., asian
utility vehicles) are not generally available from 11:00 P.M. to 5:00 A.M., and buses and jeepneys are scarce.

Since public transport at unusual hours (12:00 midnight to 5:00 A.M.) is quite scarce, even employees of BPOs located near or along roads that are regularly served by public transport throughout the day (e.g., Commonwealth Avenue, Gil Puyat Avenue, Ayala Avenue, Ortigas Avenue, etc.) may experience difficulty getting a ride during this period. Buses and jeepneys will have longer headways between them and services are usually limited in the sense that not all bus or jeepney routes are covered. In such instances, taxis fill the void and have become a popular yet expensive mode of transport. Many other BPOs would not have direct access to 24-hour road transport and certainly would have limited access to rail transport. Taxis have therefore become a convenient, direct and comfortable means of transport.

Only recently, motorcycle taxi services have emerged where even regular taxis are not enough to ferry passengers to bus/jeepney stops or rail stations. This has emerged as a new concern since these are illegal and unregulated, and there are already questions posed regarding the security and safety of such services. Such informal transport are discouraged but are not checked because of the period of their operations.

5. CONCLUSIONS AND FURTHER WORK

As the Philippine government strongly encourages and support business process outsourcing ventures, it is inevitable that the traffic impacts of these entities would eventually reach a critical mass. This is particularly due to the fact that BPOs generally are located near each other at locations identified as economic zones. Such is to take advantage of incentives to BPOs locating in these areas or buildings. As such, there is a need to ascertain in more detail the trip generation characteristics of BPOs, to be able to address transport issues pertaining to these development types.

BPO’s are now being located at so-called IT or Cyber Parks, away from the central business districts. While master plans for such facilities include transportation, these are usually generalized in the sense that the concern is not really focused on the traffic impacts of individual developments but on the entire park’s generation. Usually, only the main arterials or access roads to the parks are examined and critical local roads and intersections are not given ample attention. That is, local roads and intersections that directly serve BPOs may not necessarily have been included in the analysis.

A basic survey on the trip generation of BPOs has been conducted. The general traffic and transport characteristics, including location and potential person trip generation, were derived from the survey. The next step is to quantify trip generation for BPOs and categorize these trips into the private and public transport modes. Quantification will be in the form of surveys that will estimate the number of trips generated throughout typical weekdays and weekends. The variation of trip generation throughout the day is important in order to relate trip generation with the general morning and afternoon peak periods. Such can be accomplished through the application of the standard surveys developed by the ITE and adapted for use in a local context.

The methodology for estimating trip generation rates for BPOs closely follow established methodology developed by the ITE. Data forms for field surveys were readily available from
the ITE Trip Generation Handbook and were adapted to Philippine conditions. The guiding principles for estimating trip generation are provided by the ITE Handbook. These recommend the development of local rates should published rates be insufficient due to lack of data samples or, in the general case, because of obvious and significant differences in conditions between the characteristics of the locality and the established ITE land use classes. The latter is true in the case of business process outsourcing companies in the Philippines and thus, need to be considered to address transportation and traffic issues that concern BPOs.

REFERENCES