Understanding domestic and international tourists’ expenditure pattern in Melaka, Malaysia: result of CHAID analysis

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Abstract

This study examined the tourists’ expenditure pattern in Melaka city. A total of 1500 diary record surveys were distributed, only 1000 surveys were collected. Chi-squared Automatic Interaction Detection (CHAID) was used to model interaction of domestic and international tourists in five tourism sectors-accommodation, food and beverages, transportation, entertainment and shopping. Results revealed that the tourists spent less on transportation (RM22.50 and below) and entertainment (RM22.50 and below), and heavily spent in other three sectors, shopping (RM475 and below), accommodation (RM700 and below), food and beverages (RM367 and below). The expenditure pattern modeling assists the relevant authorities in decision making.

Keywords: CHAID; Tourists’ expenditure; Accommodation; Food and beverages; Transportation; Entertainment; Shopping; Melaka;

1. Introduction

Tourism has been recognized as one of the approaches for economic development due to its ability to generate economic benefits to the host region as well as the local community, with high annual growth rate, high volumes of foreign currency inflows dynamically. In fact, millions of people nowadays travel away from their usual environment to experience and explore the world (Coathup, 1999). Malaysia is categorized as one of the top tourist destinations in Asia (Nanthakumar et al., 2012) with some of the most recognized shopping areas in the world. In fact, Malaysia is
one of the world’s top 10 countries for tourist arrival amounting to 25.72 million in 2013 (Tourism Malaysia, 2014). Based on the tourism report from Tourism Malaysia Department, the tourists visiting Malaysia has attracted 5 top countries namely, 12,178,774 from Singapore; 2,548,021 from Indonesia; 1,791,423 from China; 1,238,871 from Brunei; and 1,156,452 from Thailand. The high number of tourists has contributed greatly to the national economy with total receipts of RM65.44 billion. The report recorded the total expenditure increased from RM104.1 billion in 2010 to RM117.7 billion in 2014. Additionally, domestic tourism expenditure was recorded at RM36.2 billion in 2014 from RM27.6 billion in 2010. Outbound tourism expenditure was recorded at RM21.3 million in 2011 from RM18.2 million in 2010. Inbound tourism expenditure showed a constant increase from 2006 to 2011. Although the total receipts has increased from RM58.3 billion in 2010 to RM60.2 billion in 2014, the annual of revenue has reduced from 6.1% to 3.1%.

However, to date far too little attention has been paid to tourists’ expenditure linkages in selected tourism sectors especially in Southeast Asia. This information on expenditure linkages and flows in every tourism activity and sector helps the host destination to better understand the structure of tourism demand and supply, besides how it changes over time. This is fundamental in formulating and designing tourism development strategies and policies in one particular host destination. Melaka, which was recognized as a UNESCO world heritage city on July 7, 2008 was chosen as the study site. The city is located strategically in Peninsular Malaysia and has attracted domestic and international tourists; hence it is listed as the top destination in Malaysia.

Thus, the aim of this paper is to examine the domestic and international tourists’ expenditure pattern and linkages in Melaka city. The study employed diary record survey method and CHAID analysis method to critically examine the linkages pattern. This paper is organized in four sections. Section 2 provides an overview of tourist expenditure. The diary record survey method as the data collection tool and the Chi-square Automatic Interaction Detection (CHAID) method are discussed in section 3. Section 4 provides the discussion of the result. Section 5 concludes the study.

2. Literature Review

The term ‘visitor expenditure’ has been clearly defined by the World Tourism Organization (1991) as the total consumption expenditure made by a visitor or on behalf of visitors for and during his or her trip and stay at the destination. It further states that visitor expenditure is the basic concept in measuring tourism activities and refers to total consumption of that particular visitor and is usually known as tourism demand. Many studies have been conducted on visitor expenditure (Aguilo & Juaneda, 2000; Ashley, 2006; Meyer, 2007; Anyango et al., 2013). Visitor expenditure usually comprises of six main components such as transportation, lodging, food and beverage, gifts and souvenirs, entertainment and recreation (Mok & Iversen, 2000). Based on Telfer et al. (2002), food and meal consumption expenditure covers one-third of the total expenditure for most tourists around the world. This is supported by Ashley and Meyer, whereby they claimed that the main part of the tourists’ expenditure is on meal and crafts. In their study, all drinks and meals expenditure were combined with souvenirs and other personal expenses. However, the findings by Ashley and Meyer are contradicted by a few other studies. Anyango et al. defended his findings with new intervention among Dutch tourists. They indicated that Dutch tourists spent 18% on accommodation, 10.5% for personal expenses, 7.5% for local transport, 3.5% for optional excursions, 2% for tips and 1.5% for visa costs. These findings differ from the Japanese tourists that spend 36.2% more than other expenditures for shopping.

In the Malaysia context, by referring to Malaysia TSA 2005-2011, visitor expenditure refers to the total paid by visitors for their consumption of goods and services during trips. All goods purchased and prepared before the trip should be included. Inbound tourism expenditure refers to the tourism expenditure of a non-resident visitor within Malaysia, whereas domestic tourism expenditure refers to the tourism expenditure of a resident visitor within Malaysia. The total tourism expenditure of visitors both resident and non-resident in Malaysia is known as internal tourism consumption that consists of total domestic tourism expenditure and inbound tourism expenditure.
3. Methods

3.1. Data collection

The diary record survey was chosen as the data collection method to record expenditure in Melaka. As compared to other expenditure recording methods in tourism research, this method reduces the error caused by memory decay recalling expenditure among tourists (Pearce, 1988; Howard et al., 1991; Frechtling, 1994; and Faulkner & Raybould, 1995). The initial sample consisted of 1500 respondents, whereby survey booklets were distributed in selected hotels based on stars ranking and only 1000 surveys were collected. The survey was administered from March 2014 to April 2014 and distributed to tourists during their hotel check-in. They were required to record their detail expenditure in five different tourism activities, namely accommodation, food and beverages, entertainment, shopping and transportation. After completion, they returned the survey to the receptionist during check-out.

3.2. Data analysis

Chi-squared automatic interaction detection (CHAID) also known as the decision tree analysis is an exploratory statistical method that was introduced by Kass in 1980. It builds non-binary trees by splitting independent variables into categories based on chi-square statistic (Magidson, 1982; Ratner, 2003). Many researches have employed the CHAID method (Kass, 1980; Chen, 2003; Legoherel and Wong, 2006; Hsu and Kang, 2007; Assaker and Hallak, 2012). In fact, CHAID method has been successfully applied in many tourism and travel researches (Van Middlekoop, Borgers and Timmermams, 2003; Chen; Hsu and Kang; Assaker and Hallak). For instance, it was used to explore hotel preferences based on demographic variables of tourists (Chung, Oh, Kim and Han, 2004), and shopping preferences among Japanese tourists to revisit Korea (Kim, Timothy, Hwang, 2011). However, Hsu and Kang claimed that the CHAID analysis is often ignored in the context of tourism studies, when this method creates the strongest relationship between variables (Valle, Pintassilgo, Matias, and Andre, 2012), and the result output are easy to understand and interpret as it is illustrated in a segment tree (Levin and Zahari, 2001; Legoherel and Wong).

CHAID analysis is carried out using XLSTAT statistical software. It has been established as a way to utilize continuous and categorical data that consists of ordinal and nominal types of variables; hence it is flexible in analyzing a mixture of data types. CHAID identifies the relationship between a dependent variable (criterion) and two or more independent variables (predictors) (Chen); therefore the data is split by using step-wise chi square analysis into statistically significant homogeneous sub-groups that are identified as ‘nodes’. Based on Chen, CHAID splits the data according to the first variable, and it starts to build the contingency tables for each node, in order to select the second variable. The process continues until the tree has reached a certain size. Finally, the summarization of result is based on the sub-groups diagram or decision trees model created. This study involved the dependent variable (criterion), refers to the types of tourists (domestic and international) and independent variables (predictors); which were the total expenditure in five tourism sectors (accommodation, food and beverages, transportation, entertainment as well as shopping). The variables involved were categorical and continuous variables which then created more categorical variables in the models.

4. Results

4.1. Profile of respondents

Table 1. Respondents' profile

<table>
<thead>
<tr>
<th>Variables</th>
<th>Components</th>
<th>Domestic</th>
<th>International</th>
<th>Variables</th>
<th>Components</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origins</td>
<td></td>
<td>52.5</td>
<td>47.5</td>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>level</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>39.0</td>
<td>29.3</td>
<td>SPM/ O-level</td>
<td></td>
<td>0.54</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>13.5</td>
<td>18.2</td>
<td>STPM/Matriculation/ A-Level</td>
<td></td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Age</td>
<td>11-20</td>
<td>3.4</td>
<td>0.5</td>
<td>Certificate</td>
<td></td>
<td>0.41</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>12-25</td>
<td>6.3</td>
<td>6.2</td>
<td>Diploma</td>
<td></td>
<td>12.7</td>
<td>0.39</td>
</tr>
</tbody>
</table>
Table 1 above illustrates respondents’ demographic profiles. The survey collected 525 (52.5%) domestic respondents and 475 (47.5%) international respondents. The majority of respondents were male (68.3%). About 44% of the respondents were in the 21-30 range of age. 28.8% of the domestic respondents were single while 23% of the international respondents were married. The majority of both domestic and international were private employees (47.4%) and most of them possessed a bachelor’s degree (55.4%). 82.9% of respondents visited Melaka for holiday. 44.4% of domestic tourists were not first-time visitors, while 36.9% of international tourists were first-time visitors. The majority of domestic tourists were travelling individually (27.3%), while the international tourists were more likely traveling with partners (20.1%).

4.2. Result of tourists’ expenditure

Appendix A shows the results of the CHAID analysis. The dependent variable was domestic and international tourists and 5 descriptors splitting the nodes were (1) accommodation expenditure, (2) transportation expenditure, (3) food and beverages expenditure, (4) shopping expenditure, as well as (5) shopping expenditure. Among the respondents (n=1000), 50% were domestic tourists, and 50% were international tourists.

The first splitting variable was total expenditure on accommodation. In Node 2, 90.6% of respondents spent RM690.00 and below for accommodation, covering 48% of domestic tourists and 42% of international tourists, while 9.4% of respondents in Node 3 spent RM690 and above, covering 1.4% domestic tourists and 8% of international tourists. The second splitting variable was total expenditure in transportation. Node 2 diverged into Node 4 and Node 5. About 77% of respondents spent RM22.50 and below for entertainment, covering 34.8% of domestic tourists and 29% of international tourists. About 13% of respondents spent RM22.50 – RM160.00 in Node 7, covering 9% of domestic tourists and 3.2% of international tourists. On the other hand, in Node 8, about 11.5% of respondents spent RM25.00 and above in Node 9, covering only 2.1% of international tourists.
The fourth splitting variable was total expenditure in shopping as well as food beverages sectors. Node 6 diverged into Node 10 and Node 11. About 63.4% of respondents in Node 10 spent RM475 and below for shopping, covering 34.4% of domestic and 29% of international tourists. While only 0.4% of respondents in Node 11 spent RM475 and above for shopping. On the other hand, Node 7 was diverged into Node 12 and Node 13. About 11.8% of respondents in Node 12 spent RM18.00 – RM363.00 for food and beverages, covering 8% of domestic tourists and 3.8% of international tourists. While 1.4% of respondents in Node 13 spent RM363.00 and above, covering only 1.4% was domestic tourist. Node 9 was diverged into Node 18 and Node 19. About 33% of respondents spent RM16.00 – RM366.50 in Node 14 for food and beverages, covering 33% of domestic and 28.3% of international, while only 1.1% of respondents spent RM750 and above in Node 15, covering only 1.1% of domestic tourist. Node 12 was diverged into Node 16 and Node 17. It is about 11.7% of respondents spent RM18.00 and below for shopping, covering 8% of domestic and 3.7% of international while only 0.1% of respondents in Node 17 spent RM750 and above.

5. Discussion and recommendation

This study is one of the few which examined the expenditure patterns of domestic and international tourists in Melaka. In order to seek the economic revenue of the local community, and provide significant implications for marketing and destination management, the host destination needs to identify who are the heavy spending travelers and which the sector contributes the most to travel spending. Thus, the CHAID analysis above was conducted and has illustrated clearly the expenditure pattern of domestic and international tourists in Melaka. The most striking results to emerge from the data are illustrated as figures below:

Fig. 1. Domestic tourists’ expenditure linkage pattern

Fig. 2. International tourists’ expenditure linkage pattern

The figures above show the linkage pattern of domestic and international tourists’ expenditure summarized and extracted from the CHAID analysis. The results indicated that these linkages involved 62% of tourists, consisting of 33% among domestic tourists and 29% among international tourists. In fact, these linkages recorded the highest percentage of tourists’ spending in five particular tourism sectors as compared to other linkages. Contrary to expectation and literature review, this study found a similar pattern among domestic and international tourists. It shows
that both domestic and international tourists spent less on transportation and entertainment, but spent a medium rate on accommodation, shopping and food and beverages. They tend to spend more than RM100.00 for these three sectors. There are several possible explanations for this result. Most of the tourists exhibited less spending on transportation because they preferred to either walk around the city or rent bicycles. These are the cheapest modes offered in Melaka as compared to taxi and local trishaw services. Surprisingly, entertainment was found to be a sector that they spent less spent on. Although state government has provided various entertainment activities which include cultural and recreational activities, but from the survey result, most of them did not spend anything in this sector and only a small percentage were spending on a few major attractions, especially the Melaka River Cruise.

However, the international tourists were likely to spend more on high rate accommodation and food and beverages as compared to domestic tourists. This was influenced by two factors, the length of stay and preferences. Most international tourists had high motivation to stay longer in Melaka and spent more on highly rated stars hotels rather than homestay and budget hotels. Additionally, most of them preferred to spend in luxury restaurants that offer great local cuisine, for instance, Baba Nyonya Restaurant and Malay Asam Pedas Bistro in Melaka City. Furthermore, tourist profiling has identified single and young professional groups as the new main market segment of tourists in Melaka. It has been proven based on the result above that Melaka is recognized as an affordable tourism destination offers affordable tourism products. It has been proven that the demand for affordable accommodation and other basic tourism services among tourists is high.

These findings suggest that some essential hospitality management and marketing strategies for the local authority and stakeholders involved is required. More efforts should be made to find out the domestic and international tourists’ preferences especially in terms of entertainment and transportation, due to the low expenditure. Although the local authorities have provided a variety of entertainment options and activities, this needs to be reviewed and explored by considering tangible cultural activities and promoting rarely explored local activities to the tourists in Melaka. Moreover, Melaka needs to employ a target marketing strategy to emphasize on attracting middle aged and older tourists, which will lead to the increase of tourists’ expenditure in Melaka.

6. Conclusion

This study has identified the expenditure pattern and linkages among domestic and international tourists in Melaka. The results showed that domestic and international tourists have similar expenditure patterns in five selected tourism sectors, with low expenditure in transportation and entertainment sectors. Melaka is one of the four top cities and most favorable destination in Malaysia after Penang, Kuala Lumpur and Selangor. In fact, Melaka is preferred as it is an affordable place to stay and visit and has a lot to offer for domestic as well as international tourists. This study aims to assist the state government in reinforcing the strength that Melaka has and improve any weaknesses. As a result, plans can be formulated in terms of development and promotional strategies in order to increase the number of tourists hence increase their expenditure. Moreover, it helps Melaka tourism stakeholders to better understand the tourist’s choice patterns; hence effective marketing strategies can be developed. In future research, it is recommended that the study is expanded to local economic benefits from the expenditure pattern of tourists. In addition, study on identification of behavior and preference factors affecting the expenditure pattern of tourists also deserves further research efforts. More recent data gathered on various perspectives of tourist’ expenditure patterns from tourism activities will produce an interesting and strong theoretical and practical relationship for the improvement of tourist expenditure that will aid Melaka in becoming a profitable and sustainable state in Malaysia.
References


Appendix A. CHAID analysis of tourists’ expenditure pattern in Melaka