River cruise impact towards local community: An Exploratory Factor Analysis approach

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Abstract
The demand for cruising has increasingly grown over the years which create a new trend for tourist to seek for a vacation in a different environment. The rapid growth of river cruise and geographical expanding has increased the cruising complexity and growing the socio-economic, environmental and cultural impacts. Therefore, the consequences of river cruise development should be assessed on how it affects primarily to the community in a tourism destination. In this study, the community perception towards the impacts of river cruise tourism development was assessed through a survey, emphasizing on four key elements: the economic, environmental, cultural and social implications. Exploratory Factor Analysis (EFA) was employed to identify the underlying structure or dimensions in the independent variables in this study. The EFA test confirmed that the tourism development impact dimension consists of four aspects; economic, environment, social impacts and cultural impacts. The result of the EFA also confirms that not all well-developed research items are generic and suitable for different research scope and setting.

Keywords:
River cruise, tourism development, tourism impact, Exploratory Factor Analysis
1 Introduction

Over the period of 30 years, the cruise industry has rapidly grown, driven by the demand from North America and followed more demand from the Europe and the rest from around the world (Cruise Lines International Association, 2014). Cruise tourism has generated many impacts especially towards the economic development of many countries. Under the segment of leisure tourism, cruise tourism is one of the rapidly growing industry since 1990, increasing by 7.2% annually and doubling every decade (Cruise Lines International Association, 2014). Cruise tourism is categorized under the segment of leisure tourism where it offers various kind of entertainment and become rapidly popular among the tourist. The demand for cruising has increasingly grown over the years which create a new trend for tourist to seek for a vacation in a different environment. There are two types of the cruise; sea cruise with the large scale of passengers on board; and river cruise in which the passengers spend more time ashore at the pit point of stop. Currently, the rapid growth of river cruise and geographical expanding has increased the cruising complexity and growing the environmental and social impacts (Jones et al., 2016).

The cruise market was divided into two categories which are sea and river cruises. As compared to sea cruise, river cruise also has increasingly popular among the tourist and has contributed to the economic growth for a particular country. The number of river cruise passengers has increased by 10% from 2008 until 2013 compared to just 7% for the industry as a whole (Accor Hotel, 2016). According to Dragan, Jovičići, and Bošković (2010), there are several factors that have conditioned the trends on the market of river cruises which are the high living of standard among the population in a few areas, the price offered through the competition among the companies in lowering the prices of their tours, the demand and supply of the tourist in new segments, the needs for traveling in a safe condition and few others.

As river cruise has become a trend, it cannot be denied that river cruise also affected the environment and the social situation of the tourism destination (Dragin et al., 2010). Within this context, the impacts of river cruise development should be assessed on how it affects especially to the community in a tourism destination (de Grosbois, 2016). In this study, the community perception towards the impacts of river cruise tourism development will be assessed which consists of three key elements of impacts which are economic, environmental and social impacts (Brida, Chiappa, Meleddu, & Pulina, 2014).

Malaysia is known as one of the countries that have a variety of diverse ecosystem and has been recognized by the International Union for the Conservation of Nature as one of twelve mega – diversity areas (Marzuki, Rofe, Hashim, & Arbaayah, 2014). Few states in Malaysia offered various kinds of tourism products, and a river cruise is one of them and can be found in Kota Klias, Beaufort. The nature of Klias River has become the habitat of endangered species that known as proboscis monkey and also became a habitat for fireflies during at night. This iconic tourism based on nature has become a
trend as it could attract many tourists from over the world to visit the destination (Feilen & Marshall, 2014). However, some areas are under the threats due to uncontrolled development and high pressure of visitors. As mentioned in Sabah Structure Plan 2033 (Jomo, 2016), Kota Klias is one of the prime conservation sites which are the main iconic tourism products are now facing critical issues at the pressure site such as congestion, the endless and uncontrolled construction, lack of tourism facilities and high visitor pressure.

The tourism development in Kota Klias has brought a significant number of tourists to visit the destination, and this matter has led to the environmental disturbance. The exploitation of this nature has created the impacts not only towards the economics of local people and the tour operators but also the environment itself. These statements are proved the tourism development in Klias River has created negative impacts due to the uncontrolled way of bringing the tourist into the destination area. Furthermore, the negative effect of the river cruise on the community may affect their quality of life and their support for future tourism development (Hyun & Kim, 2015).

2 Issues

Various studies have focused on the impacts of tourism and community perception on the impacts of tourism development (Allen, Long, Perdue, & Kieselbach, 1988; Andereck, Valentine, Knopf, & Vogt, 2005; Hanafiah, Jamaluddin, & Zulkifly, 2013; Kim, Uysal, & Sirgy, 2013; Long, Perdue, & Allen, 1990; Perdue, Long, & Allen, 1990; Sharpley, 2014). The impacts that derived from tourism development usually are divided into three categories. First is an economic impact which includes job opportunity, inflation, tax revenue, additional income, and local government debt. Second is a socio-cultural impact that includes handcrafts recognition, improvement in international communication and better understanding, increase in crime rates and cultural exchange between the tourist and the host. The third is an environmental element which encompasses the protection and conservation of parks and wildlife, the declaration of zoning area, air, water and noise pollution, littering, destruction of the wildlife habitat and vandalism (Hanafiah et al., 2013; Kim et al., 2013; Sharpley, 2014).

As mentioned in Strategic Plan of Beaufort District 2009 – 2014, Klias Wetland has a unique attraction which is fireflies, and proboscis monkey and the current tourism development created jobs opportunities for the citizens of Beaufort and lured investors to invest, where the quality of life (QoL) of local communities had been improved. However, adverse impacts of tourism development exist in Kuala Klias and may discourage them away from supporting tourism development (Pizam, 1978). Therefore, the community perceptions towards the tourism development impacts are very crucial as it may influence their support and participation towards the future development (Andereck et al., 2005; Kim et al., 2013; Sharpley, 2014). Since the goodwill and participation of the local community is crucial to the achievement and sustainability of any tourism development, the comprehension of community perspectives and the
demand of such support is very significance for the stakeholders such as local
government, policymakers and business people (Andereck et al., 2005; Hanafiah,
Azman, Jamaluddin, & Aminuddin, 2016; Kim et al., 2013).

Based on the above issues, this study aims to investigate the development impact
of Klias Wetland River Cruise towards the local community. Specifically, this study
focuses on the community perception towards the impacts of tourism development.

3 Literature Review

3.1 Economic impacts of tourism development

Many studies have denoted the positive economic impacts of tourism on host
communities (Andereck et al., 2005; Kim et al., 2013). Lin, Chen, and Filieri (2017)
mentioned the development of tourism may appeal more investment and business
activity in the local community which could boost the job opportunity, provide
additional income and improve standards of living; but it may bring the consequences
to the rise of the price of services, goods, property, and land. Liu and Var (1986)
argued that there are the negative impacts of tourism development towards the host
community such as an increase in the cost of living. Besides that, other researchers also
indicated a strong perception among the community of increased job opportunity, the
existence of local businesses and investment (Allen et al., 1988; Dragan et al., 2010).
Studies by McGehee and Andereck (2004) revealed that an improvement in tax revenue
and personal income, increased standard of living, and improved attitude toward work
had shown strong support for the economic benefits of tourism. Brida and Zapata (2009)
indicated that perceived economic benefits by the community positively related to their
support for tourism development. Also, Dragan et al. (2010) revealed that the economic
impacts of tourism also have consequences towards residents' wellbeing and further to
their satisfaction of life.

3.2 Social impacts of tourism development

Tourism brought favourable impacts toward the community, specifically in the rural
indicated the positive impacts are the upgraded infrastructure and recreation facilities.
de Grosbois (2016) argued that socio-cultural factors may not always be as positive
impacts towards the community even though economic benefits are frequently
presumed to significantly improve the quality of life of the community. King et al. (1993)
revealed that tourism development has consequences on the socio-cultural
characteristics of residents such as daily routines, habits, social lives, values, and beliefs.
Pizam (1978) found negative social impacts from tourism development, for example,
social problems such as gambling, begging, prostitution and drug abuse. There is often
a loss of local culture and resident identity if there is a poor in management and planning
but has a growth rate of tourism development.
3.3 Cultural impacts of tourism development

The term ‘culture’ is often associated with the aspects of beliefs, religion, language, foods, festivals and so on. Culture is such a pervasive part of human life that almost no human thought and behavior is free from its influence (Besculides, Lee, & McCormick, 2002; Brida & Zapata, 2009). This is in line with Liu and Var (1986) who found strong resident support for the positive cultural benefits of tourism which included historical, cultural exhibits and entertainment, with tourism as recognition towards events, identity, and cultural exchange. Moreover, tourism development rejuvenates local cultures by fulfilling to tourist quest for authenticity, (Wang, Fu, Cecil, & Avgoustis, 2006). Besculides et al. (2002) have also found residents feel tourism has promoted cultural heritage conservation and preservation; and also encourages cultural activities in the community.

3.4 Environmental impacts of tourism development

Environmental impacts of tourism development have a great deal to the local community that could be positive and negative side (Briassoulis & Van der Straaten, 2013; Holden, 2016). The possible environmental impacts are water pollution such as disposal of sewage, fertilizer dumping, road oil waste; air pollution such as emissions from vehicles and airplanes; wildlife disruption such as a result of trapping, fishing and hunting; destruction of natural habitat such as deforestation and plant destruction, forest fires, trampling on vegetation and marine life; and demolition of soil, beaches and wetlands (Andereck et al., 2005; Lo, Ramayah, & Hui, 2014). Traffic and noise also became negative impacts of tourism as mentioned by Briassoulis and Van der Straaten (2013) that tourism has an impact on the traffic problem towards the community and cites noise pollution from cars, planes, and tourists.

4 Method

Before proceeding to the research methodology, there are major hallmarks of this study that warrant explanations. First, this study is to examine the cause and effect of the economic, social, environmental and cultural impact of Klias Wetland River Cruise towards the community quality of life. Next, this study is cross-sectional which primarily involves a sample from a particular population (Churchill & Iacobucci, 2002). This study is conducted in a non-contrived setting with minimal interference researcher, therefore, it is decided to opt for the field experiment approach. Furthermore, this study chose the self-distributed and survey technique to conduct the field survey. With these hallmarks, a quantitative approach through questionnaire survey is the most appropriate method for data collection process for this study.

Looking at the nature of the sample in this study, non-probability sampling was deemed to be a feasible option. Convenience sampling was the most viable option looking at the population, time frame and response rate. According to verbal information from the District Council of Beaufort, the total population in this area is 203,
and non-contrived setting will be used by targeting on 132 respondents (Krejcie & Morgan, 1970) to be surveyed, and this amount is considered sufficient, reliable for rigorous analysis and meaningful result.

Questionnaires were divided into two major sections. The nominal scale will be applied as in Section A; the questions are focusing on the socio-demographic factors or profile of the respondent. In this section, the researcher will assess the characteristics of the respondent; gender, age, the level of education, the level of income and economic involvement in tourism. Second is Section B which will be focusing on community perception towards tourism impacts of Kota Klias River Cruise development. Four dimensions under section B investigated the economic, environmental, social and cultural impact of tourism development. Likert Scale ranging from 1-7 (strongly agree, agree, agree somewhat, neutral, disagree somewhat, disagree and strongly disagree) were utilized to get a precise and meaningful result.

The instrumentation was initially pre-tested through doctoral students from the Faculty of Hotel and Tourism Management, Universiti Teknologi MARA Puncak Alam. The fine-tuned was made based on the comments and recommendations from them who were consulted personally. After the pre-testing, a pilot test was undertaken among 30 locals in Kuala Klias. The reliability test was conducted on the overall items; ensuring higher than 0.60 coefficient alpha value (Hair, Celsi, Ortinau, & Bush, 2008). The items were then refined based on the reliability analysis feedbacks before reaching into a final version of the questionnaire.

The final data were analyzed using the SPSS version 23 software. Exploratory principal component factor analysis with varimax rotation was employed to identify the underlying structure or dimensions in the independent, mediating, and dependent variables in this study (Chin & Newsted, 1999). As the objectives of this study are to examine the reliability and validity of the dimension of tourism development impact, Exploratory Factor analysis (EFA) was utilized (Fabrigar & Wegener, 2011).

5 Findings

5.1 Demographic profiles

132 local people successfully participated in the survey process. Specifically, only 45 of them have direct involvement with the Klias Wetland River Cruise, while the rest have no involvement in tourism development in Kuala Klias. The majority of the local community or to be exact 72 percent (n=95) earned a monthly income less than RM2000. 11.4 percent (n=15) of the local community earned between RM2001-RM4000 monthly and 16.7 percent (n=22) of the local community earned more than RM4000 monthly. In term of education, frequency test showed that 6.8 percent (n =9) of the respondents only had completed the primary school education. 41.7 percent (n=55) had a secondary school qualification, 51.6 percent (n = 68) possessed a tertiary
education qualification. Meanwhile, the number of female respondents exceeded the male with 49.2 percent (n =65) against 50.8 percent (n=67).

5.2 Exploratory Factor Analysis (EFA)

As most of the items in this study dimensions were mostly adapted and modified from the previous researchers, an Exploratory Factor Analysis (EFA) was undertaken. This test is integral to establish whether a common factor or more than one factor is present in response to the items (Hair et al., 2008). Exploratory principal component factor analysis with varimax rotation was employed to identify the underlying structure or dimensions in the independent variables in this study. Altogether, one-factor analyses were performed for all four dimension about economic, social, environmental and cultural. In interpreting the factors, only a loading of .50 or greater on one factor were considered. Communality values above .50 or greater on one factor were observed in a case when only one factor emerged from the factor analysis (Hair et al., 2008). The ultimate objective is to minimize the number of significant loadings and to make sure that each variable is associated with only one factor.

5.2.1 Factor analysis for tourism development impact dimension

To ascertain the conceptual linkages among the items used to measure the economic, social, environmental and cultural impact of tourism development, the Principal Component Analysis with varimax rotation and Kaiser Normalisation was applied on eleven scale items (Abdi & Williams, 2010). Results in Table 1 showed that the KMO measure of sampling adequacy value was .819 indicating that the items were interrelated and they shared common factors. Bartlett’s Test of Sphericity was also found to be significant (Approx. Chi-Square=2621.839, p< .001) indicating the significance of the correlation matrix and thus factor analysis was undertaken was appropriate.

<table>
<thead>
<tr>
<th>Code</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Culture</td>
</tr>
<tr>
<td>SOC1</td>
<td>.812</td>
</tr>
<tr>
<td>SOC2</td>
<td>.784</td>
</tr>
<tr>
<td>SOC7</td>
<td>.728</td>
</tr>
<tr>
<td>SOC4</td>
<td>.680</td>
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<tr>
<td>SOC5</td>
<td>.662</td>
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<tr>
<td>SOC6</td>
<td>.659</td>
</tr>
<tr>
<td>ENV7</td>
<td>.888</td>
</tr>
<tr>
<td>ENV3</td>
<td>.843</td>
</tr>
<tr>
<td>ENV4</td>
<td>.837</td>
</tr>
<tr>
<td>ENV5</td>
<td>.822</td>
</tr>
<tr>
<td>ENV1</td>
<td>.703</td>
</tr>
</tbody>
</table>
The first factor (eigenvalue = 4.996) with factor loadings ranging from .659 to .812 accounted for 25.41% of the variance in the data. Six items relate to each other and made logical sense for social impact. However, SOC3 was deleted due to lower factor loading. Therefore, the original name SOCIAL IMPACT was retained. The second factor is showing 3.708 of eigenvalue with factor loadings ranging from .703 to .888 accounted for 16.928% of the variance in the data. Only two items “ENV2” and “ENV6” were deleted from the group with the other five items resemblance together and made logical sense for ENVIRONMENTAL IMPACT factor. The third factor (eigenvalue = 2.542) with factor loadings ranging from .531 to .746 accounted for 11.41% of the variance in the data. Six items related to each other and made logical sense for economic impact. However, ECO7 was deleted due to lower factor loading. Therefore, the original name ECONOMIC IMPACT was retained. The fourth factor is showing 1.744 of eigenvalue with factor loadings ranging from .664 to .798 accounted for 7.843% of the variance in the data. Only two items “CUL1” and “CUL4” were deleted from the group with the other five items resemblance together and made logical sense for CULTURAL IMPACT factor.

5.3 Instrumentations

Section B in this questionnaire focus on the tourism impacts of tourism development. There is four dimensions under tourism impacts; economic, social, cultural and environmental impacts. Table 2 shows the survey items, sources, and the decision whether to adopt or to remove the items.
Table 2: Tourism development impacts survey items, sources, and the decision

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Sources</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Economic impacts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECO1</td>
<td>Tourism has improved employment opportunities in my community.</td>
<td>Pham (2011); Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO2</td>
<td>Tourism development has increased the standard of living of the residents in Kota Klias.</td>
<td>Pham (2011); Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO3</td>
<td>Tourism development creates new business opportunities for the local community.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO4</td>
<td>Tourism development appeals many investments towards the community.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO5</td>
<td>The community can enjoy benefits from tourism development.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO6</td>
<td>Many goods and services prices are increased in the community due to tourism development.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ECO7</td>
<td>The prices of real estate have increased in the community due to tourism development.</td>
<td>Pham (2011)</td>
<td>Removed</td>
</tr>
<tr>
<td></td>
<td><strong>Environmental impacts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENV1</td>
<td>Tourism has contributed to the implementation of preservation of natural areas.</td>
<td>Andereck et al. (2005)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ENV2</td>
<td>Tourism has increased the preservation and protection of wildlife habitats.</td>
<td>Andereck et al. (2005)</td>
<td>Removed</td>
</tr>
<tr>
<td>ENV3</td>
<td>Tourism has improved the ecological environment of the community in many ways.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ENV4</td>
<td>The construction of jetties and homestays has destroyed the environment in the region.</td>
<td>Pham (2011)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ENV5</td>
<td>Tourism produces large quantities of waste products.</td>
<td>Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td>ENV6</td>
<td>Tourism caused deforestation and contributes to the loss of meadows and green space.</td>
<td>Hanafiah et al. (2013); Andereck et al. (2005)</td>
<td>Removed</td>
</tr>
<tr>
<td>ENV7</td>
<td>Tourism caused environmental pollutions; air, water, and soil.</td>
<td>Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td></td>
<td><strong>Social Impacts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC1</td>
<td>Tourism development provides more recreational opportunities for residents.</td>
<td>Pham (2011); Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td>SOC2</td>
<td>Tourism development provided entertainment opportunities for the local community.</td>
<td>Pham (2011); Hanafiah et al. (2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td>SOC3</td>
<td>Tourism development provided entertainment opportunities for the local community.</td>
<td>Hanafiah et al. (2013); Andereck et al. (2005)</td>
<td>Removed</td>
</tr>
<tr>
<td>SOC4</td>
<td>Tourism development provided opportunities to meet new people from outside the community.</td>
<td>Hanafiah et al. (2013); Andereck et al. (2005)</td>
<td>Adapted</td>
</tr>
<tr>
<td>SOC5</td>
<td>Tourism development led to increased traffic in my community.</td>
<td>Andereck et al. (2005)</td>
<td>Adapted</td>
</tr>
<tr>
<td>SOC6</td>
<td>Tourism development led to crowding of public spaces and facilities.</td>
<td>Andereck et al. (2005)</td>
<td>Adapted</td>
</tr>
<tr>
<td>SOC7</td>
<td>Tourism negatively contributes to social problems such as crime, drug use, prostitution, alcoholism, gambling, smuggling, and so on in the community.</td>
<td>(Pham, 2011); (Hanafiah et al., 2013)</td>
<td>Adapted</td>
</tr>
<tr>
<td></td>
<td><strong>Cultural Impacts</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The tourism development impact dimension consists of four aspects; economic, environment, social impacts and cultural impacts. Based on the EFA, several items were removed based on the low loading value. In the economic impact dimension, one variable (ECO7) that emphasizes whether the prices of real estate have increased in the community due to tourism development was removed. Next, two variables in the environmental impact dimension were removed. These two questions; ENV2 and ENV6 emphasize on preservation and protection of wildlife habitats and the deforestation effect of tourism development. Further, only one variable was removed from each social impact and cultural impact dimension. They are SOC3 focusing on the entertainment opportunities for the local community and; CUL1 and CUL4 that stress on whether tourism modifies local culture and living style.

### 6 Conceptual Framework

Based on adoption and adoption by previous researchers and theories, and after EFA, the conceptual framework for this study is constructed. The independent variable for this study is sustainable tourism development and community perception on the impact of Klias River Cruise development. This framework includes economic, environmental and social impacts and it is an appropriate tool for assessing sustainable perspective on tourism impacts. Figure 1 below depicts the conceptual framework for tourism development impact, specifically of Klias River Cruise tourism development impact.
7 Conclusion

Although most of the items in this study dimensions were mostly adapted and modified from the previous researchers, the result of the EFA confirms that not all well-developed research items are generic and suitable for different research scope and setting. The EFA result requires the researcher to make some important decisions concerning dropping several instruments. It turned out that the measurements of the tourism development impact dimension loaded specifically in their pre-selected factors, which could indicate reliable and valid adapted instruments. The EFA test confirmed that the tourism development impact dimension consists of four aspects; economic, environment, social impacts and cultural impacts. This study most likely will encourage the other researchers to explore more in-depth related to the impacts of tourism development towards the community in a tourist destination.

8 Acknowledgements

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9 References


