Jurnal Ekonomi Malaysia 48(2) 2014 71 - 82

Development of Tourism Industry and Its Impact on Langkawi Island Community

(Pembangunan Industri Pelancongan dan Kesan kepada Komuniti Tempatan di Langkawi)

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ABSTRACT

Langkawi Island is one of the most popular tourist destinations in Malaysia among both domestic and international tourists. The development of the tourism industry on this island has brought direct and indirect impact to the local communities. The objective of the present study is to analyze the impact of tourism development on the local community of Langkawi. This study is based on the perspectives of 493 local residents selected using multistage cluster sampling. Questionnaires are used as an instrument to collect data via a face to face interview in predetermined locations which are in proximity to tourist destination areas. Based on the social exchange theory (SET), 24 variables are examined. Statistical techniques used to analyze data in this study include mean analysis, exploratory factor analysis (EFA) and regression analysis. The results for the mean analysis show that five variables that have the highest mean score are; increasing the provision of appropriate employment opportunities (4.15); encouraging tourists to come and spend their money in Langkawi (4.14); increasing community's pride in their own culture (4.09); providing employment opportunity for the local residents (4.09); and attracting investors to Langkawi (4.07). Exploratory factor analysis (EFA) is conducted resulting in all the 24 variables grouped into 4 constructs namely economic, social, cultural and environmental factors. However, only social, cultural and economic factors are statistically significant in influencing the overall perceptions on tourism development impact on the island based on a multiple regression analysis. Although environmental factor is not significant in the regression model, based on the mean analysis this study concludes that there is a slight environmental degradation due to tourism development on this island. The mean analysis also shows that in general, the community perceived that tourism development brings positive impact. Hence, local community's active participation in the industry is encouraged. Stakeholders in the tourism industry in Langkawi such as the federal and state governments; and private agencies, must engage in more proactive initiatives to ensure continuous participation from the local community which consequently will result in a long run sustainable development of the tourism industry on the island.

Keywords: Community; Langkawi Island; tourism development; tourism impacts

ABSTRAK

Pulau Langkawi adalah antara destinasi pelancong domestik dan antarabangsa yang paling popular di Malaysia. Pembangunan industri pelancongan telah banyak membawa kesan langsung dan tidak langsung kepada komuniti tempatan. Objektif kajian ini untuk menganalisis kesan pembangunan pelancongan kepada komuniti tempatan di Langkawi. Kajian ini berdasarkan kepada perspektif 493 komuniti tempatan dipilih berdasarkan persampelan klustur berperingkat. Kajian adalah berdasarkan Teori Pertukaran Sosial (Social Exchane Theory - SET). Soal selidik digunakan sebagai instrumen untuk mengumpul maklumat melalui temubual bersemuka di beberapa lokasi yang dipilih di kawasan pelancongan. Teknik statistik yang digunakan untuk menganalisis data ialah analisis min, analisis faktor penerokaan (EFA) dan analisis regresi berbilang. Sejumlah 24 pemboleh ubah dianalisis dalam teori SET. Dapatan daripada analisis min mendapati lima pembolehubah yang memperoleh skor min tertinggi adalah; meningkatkan penyediaan peluang pekerjaan yang sesuai (4.15); menggalakkan pelancong untuk datang dan membelanjakan wang mereka di Langkawi (4.14); meningkatkan kebanggaan masyarakat dalam budaya mereka (4,09); menyediakan peluang pekerjaan kepada penduduk tempatan (4.09); dan menarik pelabur ke Langkawi (4.07). Daripada analisis faktor penerokaan (EFA) kesemua 24 pemboleh ubah ini dikelompokkan ke dalam 4 konstruk iaitu faktor ekonomi, sosial, budaya dan alam sekitar. Hasil kajian daripada analisis regresi berbilang mendapati faktor sosial, budaya dan ekonomi adalah signifikan

dalam mempengaruhi persepsi menyeluruh terhadap kesan pembangunan pelancongan di Langkawi. Walaupun faktor alam sekitar tidak penting dalam analisis regresi, tetapi melalui analisis min terdapat sedikit kemerosotan alam sekitar akibat pembangunan pelancongan di pulau ini. Analisis min juga menunjukkan bahawa secara umumnya, komuniti berpandangan bahawa pelancongan membawa kesan keseluruhan yang positif. Oleh itu, penyertaan aktif komuniti tempatan di dalam industri pelancongan digalakkan. Pihak berkepentingan dalam industri pelancongan di Langkawi seperti Kerajaan Persekutuan/Negeri/Tempatan dan agensi-agensi swasta, mesti melibatkan diri secara aktif dan lebih proaktif untuk memastikan penyertaan berterusan dari komuniti setempat. Ini membolehkan pembangunan lestari jangka panjang industri pelancongan di Langkawi.

Kata kunci: Komuniti; Pulau Langkawi; pembangunan pelancongan; impak pelancongan; teori pertukaran sosial

INTRODUCTION

Langkawi Island is one of the most popular tourist destinations in Malaysia. Overall, Langkawi has an area (including the surrounding islands) of about 478.48 km^2. Of these islands, only three are inhabited: Langkawi Island, Dayang Bunting Island and Tuba Island. Langkawi Island is covered by forested mountains, hills and native plants, and surrounded with limestone structures. It is located approximately 30 km from Kuala Perlis; 51.5 km from Kuala Kedah; and 109 km from Penang.

Langkawi's natural and man-made tourism products transformed this island into a famous tourist destination especially after it was declared a duty-free island by the Malaysian government in 1987. Economic development in Langkawi was further boosted following the establishment of Langkawi Development Board (LADA) in 1990. LADA is responsible for planning and implementing development in Langkawi. However, both public and private agencies are actively involved in tourism related programs and activities to expedite tourism development on this island and consequently contribute to overall national development (Yussof & Omar 2007).

Before Langkawi became a popular tourist destination, the main source of income for the local community was from agricultural and fishery activities. Most were either small-scale farmers or traditional offshore fishermen. However, tourism developments in this island have gradually transformed the economic activities of the local community. Business and service sectors which are mostly tourism based provide new economic opportunities for the local community to garner income.

This island is often associated with legends that have further increase the island's appeal to tourist. The most well-known of the legend is the tale of Mahsuri and her cursed that lasted for seven generations on the island. Hence, besides the town of Kuah, locations that are associated to these legends such as Beras Terbakar, Padang Masirat, Pasir Hitam beach, Perigi Tujuh, Dayang Bunting Island and Mahsuri mausoleum have been developed for tourism purposes. Since the island is also endowed with beautiful beaches, beach-related tourism has been explored especially in Chenang and Tengah beaches.

To capture demand from both domestic and international tourist, various programs have been undertaken to improve the image of Langkawi since 1991. This includes organizing internationally recognized events such as Langkawi International Maritime and Aerospace Exhibition (LIMA) on a bi-annual basis, Le Tour de Langkawi, Langkawi Ironman Triathlon, International Paintball and the Langkawi International Regatta. Langkawi Island was also declared by UNESCO as the first Geopark in South East Asia in 2007. The recognition of this Geopark at a global level will bring in more visitors, researchers and nature enthusiasts.

Due to these international events, the number of both domestic and international tourist arrivals to Langkawi has been increasing significantly. In 2000, Langkawi was visited by 1,810,460 tourists, and increased to 2.3 million in 2008 and 2.4 million in 2010. The increase in tourist arrivals has spurred a corresponding increase in demand within the tourism service industry. The government, private sectors and local communities have experienced a considerable amount of economic development as a result of the booming tourism industry in Langkawi Island.

The developments that are taking place on the Island have brought socio-economic changes to the island's population. The changes act as a catalyst for rapid tourism growth on the Island. To further sustain growth and developments of this industry, the involvement of the local communities is deemed critical (Anand & Sen 2000). The marginalization of the local communities from the tourism planning and development stages will reduce the chances of its success. Such marginalization could worsen the livelihood of the local community by increasing socio-economic disparities.

The present study analyzes the impact of tourism development on local communities on Langkawi Island. The evaluation and analysis of the positive and negative tourism development impact on the island are based primarily on the perspective of the local community. Specifically, this study aims to:

Analyze tourism impacts from four different aspects which are economic, social, cultural and environmental

Identify significant variables that affect the economic, social, cultural and environmental impacts on Langkawi Island.

The discussion of this paper is structured as follows, the introduction to the development of tourism industry

in Langkawi Island, a literature survey/reviews on the impact of tourism development, an outline of the scope and methodology used presentation and discussion of the findings. The final section presents the conclusion and implications of the present study.

LITERATURE REVIEW

Extensive empirical studies conclude that tourism affects local communities positively and negatively. If the local population perceives tourism as benefitting them, they will embrace and actively participate in the industry (Liu and Wall 2006; Kayat 2008). However, the converse is also true.

In general, researchers find that tourism development brings changes to local communities. This development is able to spur positive socio-economic changes and transform economic activities of the local community (Garegnani 1970). However, for these changes to occur, the local community must be included and must also participate actively in the development process as to achieve sustainable development at the tourist destination area (Anand & Sen 2000). The locals must be given priority in terms of job opportunities in tourism-related businesses. If the industry is unable to provide job opportunities, the traditional economic activities will remain and no economic progress will occur (Todaro 1995), which causes them to remain in poverty (Ranis, Stewart & Ramirez 2000). The failure to bring about positive changes will then result in a negative perception towards tourism development among the locals and thus the future success of tourism development activities may be hampered (Andriotis 2005).

Studies in the literature also examine the impacts of tourism development from various perspectives. For instance, Andereck et al. (2005) Sirakaya et al. (2001); Jurowski et al. (1997); and Pearce (1991) find that tourism development impact is evaluated by the locals in terms of quality of life; or the three forms of sustainability: economic, socio-cultural (culture and social) and environmental (physical environment). According to Kang et al. (2008), tourism development not only changes the physical landscape of a given tourist destination, but also results in social changes within the community. Social changes may occur through various ways (Eshliki & Kaboudi 2012), particularly in the attitude and behavior of the locals (Lawton 2005).

Meanwhile, results from a study among the indigenous people in Malaysia by Zuriatunfadzliah Sahdan et al. (2009) finds that high tourist arrivals, which was taken as a proxy for tourism development, influences cultural aspects of a community, including clothing, food, handicrafts and language. Tourism development also injects positive values into their traditional way of life, family relationship and individual behavior and on the community itself (Zuriatunfadzliah Sahdan et al. 2009). However, negative tourism impacts are mostly related to social problems, such as criminal cases, robbery, snatch thief, sex and drugs.

Tourism development also has a direct effect on the environment of a given tourist destination area. The effect on the physical environment includes effect on the natural elements that initially had attracted tourists to visit. However, irresponsible attitudes and poor management towards the environment by a community obsessed with rapid development can negatively affect the physical environment. The deterioration in the environment will include pollution, noise, and loss of habitat, erosion and sedimentation. An influx of tourists that exceeds the carrying capacity of a given destination will result in the environmental deterioration of the destination (Jahi et al. 2009). Other environmental impacts include the impact of tourism on air quality, originating from the release of smoke containing carbon monoxide and sulphur dioxide gases. Unfortunately, air pollution are apparently inevitable during the development phase of a tourism industry because the development has a direct growth effect on the public transport sector, such as buses and taxis. Emission from the increase volume of traffics in these destinations will consequently lower the air quality.

Hence, before any development is undertaken in order to enhance tourism expansion and economics growth (Siti Shuhada et al. 2013, Othman & Salleh 2010), it is crucial for a comprehensive study to be made on the effects of tourism development to the local economy, socio-culture and environment. The effects analyze should include direct and indirect effects, be it in the short run or the long run. The concept of sustainability must be made an important objective in tourism development as it includes important environmental processes to be considered in safeguarding the daily lives of the local populations (Schmandt & Bloomberg 1969).

METHODOLOGY

This study uses both secondary and primary data to analyze tourism impacts in Langkawi Island. Secondary data is collected to give a better overview and understanding of the issue under study and these are gathered from various state and district publications. Primary data was collected after a few field visits to ensure proper procedure was executed in the sampling and data collection processes.

Discussion on this section will focus on the theoretical framework, location and sampling method, research instrument and the statistical analysis used in this study.

THEORETICAL FRAMEWORK

The present study is premised upon the social exchange theory (SET) as developed by Latane and Wolf (1981).

SET is one of the frameworks that are often used by researchers to examine the attitudes of members of a community (Byrd et al. 2009; Gursoy et al. 2010) and explains the reaction of such individuals as the results of development project and policy being implemented (Nunkoo & Ramkissoon 2011). As a result, the SET is applied in a variety of disciplines, including psychology; politics and administration; and law (Husbands 1998; Madrigal 1993; Lankford & Howard 1994; Ritchie 1984). SET is also used to investigate community responses and perceptions of tourism events that affect them individually or as a community in the aspects of economic, social, cultural and environmental. Common statistical analyses employed in SET frameworks include regression analysis and structural equation modeling (SEM).

STUDY LOCATION AND SAMPLING METHOD

A multistage cluster sampling technique was used in this study. Langkawi Island is divided into six clusters represented by the regional districts in the island. Each cluster was then divided into sub clusters which encompasses smaller zones in each district. All tourist destination areas were subsequently identified in each sub cluster. Since the study focuses on tourism impact on local community, data collection was done in the selected sub cluster tourism areas which included Kuah Town, Padang Mat Sirat, Ayer Hangat, Ulu Melaka, Kedawang, Chenang and Bahor.

Data collection was done by face to face interviews. The interviews were conducted at locations predetermined by the sampling procedure and were in proximity to tourist destination areas. A total of 439 respondents comprising of local residents were successfully interviewed.

RESEARCH INSTRUMENT

A questionnaire is used as a research instrument to facilitate data collection during field work. The questionnaire is in Bahasa Melayu segmented into two parts. The first part of the questionnaire gathers socio-demographic information on the respondents. Six closed ended questions are included pertaining to the profile of the respondents, including gender, race, religion, marital status, age and educational level.

The second part of the questionnaire examines tourism development impacts on Langkawi Island. A total of 24 variables are examined in the present study. All of the variables examined are selected upon the completion of a thorough literature review which is based on the SET. The variables are then developed into nine constructs to meet the objectives of this study. All of the questions are answered according to a five point Likert scale, ranging from 1 "Highly disagree" to 5 "Highly agree" (Igbaria et al. 1995; Fornell et al. 1996; McCool & Martin 1994).

STUDY ANALYSIS

The development impact of the tourism industry on the local community of Langkawi Island in this study is based on its community perceptions. Three statistical analyses are perform which are i) mean analysis; ii) exploratory factor analysis (EFA); and iii) regression analysis.

Mean analysis is conducted in order to make a ranking analysis of the 24 variables and determining which variables have the highest or lowest tourism development impact on the community based on their perceptions. A mean comparison analysis is also conducted to determine whether there exist differences in perceptions between different demographic groups using the ANOVA analysis.

Then, the EFA analysis (Byne 2001) is performed in order to condense and classify the 24 variables into its appropriate constructs. The validity tests of the EFA, which consists of the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity, must also be satisfied.

The Kaiser-Meyer-Olkin (KMO) tests whether the variables are adequate for factor analysis. The sufficient condition for KMO is a value greater than 0.5. Bartlett's Test of sphericity hypothesizes that all variables are uncorrelated in the population when the correlation matrix is an identify matrix. If the significance value for this test is less than the alpha level 0.001 (Kaiser 1974), then the null hypothesis is rejected. Rejecting the null hypothesis indicates that correlations exist in the data set which concludes that factor analysis is appropriate.

Validity tests perform in grouping the variables into its appropriate constructs include varimax rotation (eigenvalues, percentage of variance and cumulative variance explained) and the reliability test of Cronbach's Alpha. Eigen value is an indication of the number of constructs that can be developed. If the eigenvalue is less than 1 then the construct should be eliminated. (Hair et al. 1998). Factor loading for each variable is considered similarly, however the value must be greater than 0.4.

The percentage of variance explained and the cumulative variance explained are used to ensure that the data is in a good fit. The value of the cumulative variance should provide adequate value or explain more than 50 percent of the total variance (Fornell & Larcker 1981; Hair et al. 1998).

The Cronbach Alpha reliability test is a crucial test that assumes each variable is considered as an equivalent test and all correlations between items that are measured are the same in each construct. A Cronbach Alpha (CA) value of 0.6 is considered to be an acceptable value, a CA value between 0.6 and 0.7 is moderate; a CA value between 0.7 and 0.8 is good; a CA value between 0.8 and 0.9 is very good; and a CA value above 0.9 is considered excellent (Hair et al. 2007).

The present study then proceeds to perform a multiple regression analysis (Gefen *et al.* 2000 and Sakar 2011). The multiple regression analysis is used to estimate

the strength of the relationship between a dependant and independant variables. In this study, 2 models were developed as in Equations (1) and (2). The first model estimates the relationship between the dependant variable which is the overall respondents perception of the impact and the independant variables which are the constructs that was previously developed using the EFA as defined in Table 1. The second model estimates the same dependant variable against all of the 24 variables that are used in the study. The models specification are thus represented as in:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i \text{ ---} \quad (1)$$

$$Y = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_4 + \varepsilon_i \text{ ---} \quad (2)$$

The definition of variables in Equations (1) and (2) is elaborated in Table 1.

TABLE 1. Definition of variables

Variables	Definitions and items measured
Y	Overall respondents perception of the impact
X_1,	The environmental impact
X_2	The economic impact
X_3	The social impact
X_4	The culture impact
X_{1i}	All of the items in the environmental construct
X_{2i}	All of the items in the economics construct
X_{3i}	All of the items in the social construct
X_{4i}	All of the items in the culture construct

Note: Mean values are used in the estimation.

EMPIRICAL RESULTS

The discussion on the empirical results proceeds as follows. First, this paper presents a discussion on the demographic profile of the respondents, followed by an examination on the perceived impacts of tourism development on the population of Langkawi Island and finally the results of the multiple regression analysis that was performed.

DEMOGRAPHIC PROFILE OF RESPONDENTS

Table 2 shows the socio-demographic profile of the respondents. In this study, 493 respondents participated in the survey. The distribution of gender shows that the percentage of male and female is approximately equal. In terms of race, ethnic Malays are the highest number of respondents with 84.6%, followed by ethnic Chinese at 13.6% and ethnic Indians at 1.2%. Majority of the respondents are Muslims (85.6%), followed by Buddhists (11.0%), Christians (1.8%) and Hindus (1.4%). Majority of the respondents are also married (69.2%), while 30.8% of the respondents are single. Most respondents are between the ages of 31 and 40 years old (43.3%). 39.20 percent of the respondents have completed the SPM or PMR examinations; while 21.90% are STPM certificate holders.

TABLE 2. Respondent Demographic Profile

Information	Item	Total	Percentage (%)
Gender	Male	211	42.8
	Female	282	57:2
Race	Malay	417	84.6
	Chinese	67	13.6
	Indian	6	1.2
	Others	3	0.6
Religion	Islam	422	85.6
	Christian	9	1.8
	Buddhist	54	11.0
	Hindu	7	1.4
	Others	1	0.2
Marital Status	Single	152	30.8
	Married	341	69.2
Age	Under 15	0	0
	16-20	67	13.6
	21-30	206	41.2
	31-40	211	43.4
	41-50	6	1.2
	51-60	3	0.6
	Above 61	0	0
Education Level	No certificate	36	7.3
	Primary school/ UPSR	35	7.1
	LCE/SRP/PMR/SPMV	193	39.20
	HSC/STPM	108	21.9
	Diploma	79	16
	Degree	42	8.5

Source: Field Survey

MEAN ANALYSIS

Mean analysis is conducted to measure the strength of the impact of each variable relating to the development of tourism industry based on community perceptions. The higher the mean value, the higher is the impact perceived by the community in Langkawi and vice versa. Mean analysis performed in this study has also been considered as a measurement tool in previous tourism literatures (Andereck et al. 2005; Sirakaya et al. 2001; Jurowski et al. 1997: Pearce 1991).

Table 3 shows the mean and standard deviation of each variable used in this study. Five variables from the total 24 variables examined scored the highest mean. These variables measure community perception on tourism impacts which are, increasing the provision of employment opportunities (4.15); encouraging tourists to come and spend their money in Langkawi (4.14); increase community's pride in their own culture (4.09); providing more employment opportunity for the community (4.09); and attracting investors to Langkawi Islands (4:07). These

TABLE 3. Mean analysis of variables

	Variables/indicators	Mean	Std. Deviation
1.	Provide suitable job	4.15	0.843
2.	Encourage more tourists to come and spend their money	4.14	0.819
3.	Causing community to proud with their own culture	4.09	0.851
4.	Provide more employment opportunities	4.09	0.833
5.	Encourage more outside investors	4.07	0.830
6.	Increase the community income	4.06	0.866
7.	Do not cause any congestion (traffic)	4.04	0.784
8.	Surrounding area/environment is getting clean	4.01	0.742
9.	Do not increase the noise levels	4.01	0.762
10.	Increase the family economic standard	3.96	0.872
11.	Do not affect water quality	3.96	0.773
12.	Solid wastes are managed efficiently	3.94	0.783
13.	Increase your daily expenses	3.93	1.034
14.	Increase the housing prices / land / housing rental	3.92	1.023
15.	Do not produce a lot of garbage	3.91	0.782
16.	Increase your interest to meet/interact with more tourists	3.91	0.889
17.	Your livelihood are getting better	3.83	0.797
18.	The Langkawi residents are getting better in term of their knowledge about others socio-cultural and their life	3.71	0.968
19.	Change the way of life	3.57	1.112
20.	Do not cause any congestion at the recreational area	3.32	1.192
21.	Do not increase in accidents among residents	3.09	1.126
22.	Increase in financial expenses/spending of the government due to the construction of tourist facilities	2.95	2.203
23.	Do not damage the public property	2.83	1.155
24.	Do not increase the number of criminal cases	2.80	1.170

five aforementioned variables are all positive impacts as perceived by the community as a result of the tourism development industry in Langkawi.

Meanwhile, the five (5) variables recording the lowest mean scores are as follows: does not increase the number of criminal cases (2.80); does not result in damage to public property (2.83); increases the financial expenditures of the government due to the construction of tourist facilities (2.95); does not cause congestion near recreational areas (3.32); and does not increase the number of road accidents (vehicles) among residents (3.09). The low mean scores indicate that tourism development in Langkawi Island does not bring significant undesirable physical, social and environmental effects to the local community.

The above analysis is primarily based on the mean value of the respondents' perceptions. However, these perceptions may vary between different socio-demographic backgrounds, such as age, level of education and gender. Thus, the analysis of mean comparison for each variable is performed to determine if the difference in perceptions exist in between groups. The hypotheses for the mean comparison for each variable are as follows:

H_0 = no mean difference exists between age groups
H_a = a mean difference exists between age groups

H_0 = no mean difference exists between education groups
H_a = a mean difference exists between education groups

H_0 = no mean difference exists between genders
H_a = a mean difference exists between genders

The results for the mean comparisons are presented in Table 4 and a result summary of important variables are shown in Table 5. Table 5 indicates that seven variables exhibit mean differences in relation to education, ten (10) variables exhibit mean differences in relation to age and two (2) variables exhibit mean differences in relation to gender.

TABLE 4. The Analysis of Mean Comparison and the Anova Analysis

Variables	Level of education							Age						Gender		
	No certificate	Primary school/ UPSR	LCE/SRP/PMR/ SPMV	HSC/STPM	Diploma	Degree	Anova Analysis (F-test)	20-29	30-39	40-49	50-59	60-69	Anova Analysis (F-test)	Man	Women	Anova Analysis (F-test)
1. Your livelihood are getting better	3.67	4.03	3.81	3.88	3.89	3.69	1.176	3.88	3.78	3.78	3.80	4.20	1.791	3.89	3.79	1.609
2. Do not increase the noise levels	4.08	4.37	3.98	3.94	3.93	4.10	2.198	3.95	4.07	3.93	4.02	4.32	1.881	3.95	4.05	1.959
3. Solid wastes are managed efficiently	3.83	4.34	3.89	3.86	3.94	4.15	3.001*	3.97	3.94	3.78	4.00	4.36	3.141*	3.94	3.94	0.002
4. Do not produce a lot of garbage	4.17	4.40	3.87	3.82	3.79	3.92	4.431*	3.88	3.87	3.87	4.05	4.24	1.668	3.87	3.94	1.035
5. Do not affected water quality	3.94	4.17	3.86	3.99	4.00	4.08	1.432	3.89	4.03	3.88	4.02	4.16	1.440	3.94	3.97	0.126
6. Do not cause any traffic congestion	3.97	4.37	4.06	3.94	3.95	4.21	2.310*	3.98	4.16	3.92	4.07	4.28	2.475*	3.98	4.09	2.649
7. Surrounding area/environment is getting clean	3.94	4.40	3.87	4.11	4.04	4.05	4.020*	3.98	3.99	3.96	4.18	4.16	1.056	4.05	3.98	1.143
8. Provide more employment opportunities	4.11	4.11	4.09	4.00	4.17	4.10	0.415	4.24	4.08	3.87	4.09	4.04	3.291*	3.89	3.79	4.530*
9. Increase the community income	3.92	3.89	4.03	4.12	4.13	4.15	0.838	4.20	4.07	3.97	3.82	3.80	2.885*	3.95	4.05	7.218*
10. Encourage more foreigners/inbound tourists to come and spend	4.00	4.17	4.06	4.23	4.28	4.15	1.248	4.24	4.11	3.97	4.27	4.28	2.151	3.94	3.94	0.906
11. Encourage more outsiders to invest	3.97	4.23	4.01	4.18	4.04	4.05	0.936	4.07	4.07	3.97	4.16	4.28	0.902	3.87	3.94	0.794
12. Increase the family economic standard	3.92	3.89	3.91	3.96	4.22	3.79	1.963	4.13	3.89	3.96	3.80	3.52	3.912*	3.94	3.97	0.674
13. Increase your daily expenses	4.00	3.97	4.13	4.23	4.17	4.15	0.801	4.21	4.24	3.99	4.07	3.88	2.499*	3.98	4.09	2.414
14. Increase the housing prices / land / housing rental	3.97	3.69	3.91	3.96	3.88	4.23	1.140	3.80	4.01	3.91	4.18	3.96	1.548	4.05	3.98	1.016
15. Increase in financial expenses/spending of the government due to the construction of tourist facilities	4.03	3.86	3.82	3.95	3.89	4.33	1.811	3.82	3.93	3.99	4.05	4.04	0.819	3.89	3.79	0.000
16. Do not damage the public property	2.47	2.49	2.85	2.99	2.89	2.74	1.853	2.76	2.91	2.91	2.77	2.52	0.931	2.80	2.85	0.196
17. Do not increasing the number of criminal cases	2.58	2.51	2.73	2.84	2.89	3.33	2.586*	2.65	3.01	2.92	2.61	2.44	2.987*	2.77	2.83	0.254
18. You livelihood are getting better	2.78	2.60	2.94	3.06	2.90	3.21	0.389	2.85	2.82	3.35	3.02	2.48	1.417	3.09	2.84	1.449
19. Change the way of life	3.44	2.91	3.46	3.66	3.93	3.87	5.533*	3.71	3.54	3.56	3.52	2.96	2.668*	3.60	3.55	0.231
20. Do not increase in accidents among residents	3.22	3.11	2.95	3.07	3.15	3.51	1.832	2.95	3.22	3.12	3.00	3.28	1.421	2.99	3.16	2.733
21. Do not cause any congestion at the recreational area	2.92	2.97	3.34	3.28	3.51	3.64	2.486*	3.22	3.39	3.43	3.41	3.00	1.130	3.21	3.40	3.268
22. Increase your interest to meet/interact with more tourists	4.06	3.83	3.91	4.00	3.88	3.72	0.856	4.01	3.80	3.86	4.18	3.72	2.506*	3.89	3.93	0.328
23. The Langkawi residents are getting better in term of their knowledge about others socio-cultural and their life	3.67	3.57	3.66	3.78	3.87	3.62	0.852	3.73	3.84	3.61	3.59	3.52	1.349	3.63	3.78	2.948
24. Causing community to proud with their own culture	3.97	4.20	4.03	4.08	4.32	3.92	1.928	4.15	4.07	3.89	4.32	4.24	2.506*	4.06	4.11	0.534

* Significant at the $\alpha = 0.05$.

TABLE 5. Summary of important Variables in Analysis of Mean Comparison

	Variables	Education	Age	Gender
1.	Solid wastes are managed efficiently	√	√	
2.	Do not produce a lot of garbage	√		
3.	Do not cause any traffic congestion	√	√	
4.	Surrounding area/environment is cleaner	√		
5.	Provide more employment opportunities		√	√
6.	Increase the community income		√	√
7.	Increase the family economic standard		√	
8.	Increase daily expenses		√	
9.	Do not increase the number of criminal cases	√	√	
10.	Change the way of life	√	√	
11.	Do not cause any congestion at the recreation area	√		
12.	Increase your interest to meet/interact with more tourists		√	
13.	Increase community's pride in their own culture		√	

In conclusion, the most significant mean difference found during the mean comparative analyses relate to age, followed by education and gender.

THE FACTOR ANALYSIS

Factor analysis can be performed since the KMO is at a satisfactory level (0.868) and the result of the Bartlett's test (0.000) is satisfactorily significant (Sig. = 0.000).

The results of the EFA are shown in Table 6. Using the 24 variables, four constructs are developed which are environmental; social (safety and wellbeing); cultural (knowledge and skill); and economic (investment and cost) factors.

The results of the percentage variance tests indicate the percent of total variance accounted for by each construct. The cumulative percentage of variance accounted for by the first four constructs is 53.957 percent of the total variance, which exceeds the threshold percentage of 50 percent indicating that the four constructs are at acceptable level. The percentage of total variance explained by the construct for environment; economic; social and culture are 23.194 percent, 18.473 percent, 6.550 percent and 5.740 percent respectively. The results for the reliability test using Cronbach Alpha values are as follows: environmental constructs attain a value of 0.852; economic constructs attain a value of 0.779; social constructs attain a value of 0.723; and cultural constructs attain a value of 0.669. Since the Cronbach Alpha value is greater than 0.6, the results of the reliability test are found to be in the acceptable range (Hair et al. 2007).

MULTIPLE REGRESSION ANALYSIS

The output for the multiple regression analysis is shown in Table 7. The accuracy of the regression analysis is measured by the goodness of fit. The F-statistic test is used to determine whether the independent variables reliably predict the dependent variable. The value of the F-statistic in the present study is 41.287 with a p-value less than 0.05 indicating a statistically significant relationship between the groups of independent constructs which are environment, economic, social and cultural with the dependent variable.

The value of R^2 which is the coefficient of determination is 0.253 as shown in Table 7. This value indicates that 25.3 percent of the variance in the overall respondents' perception on tourism impact can be predicted from the four constructs. Although this value is low, it is acceptable since the present study uses cross-sectional data (Haber and Lerner 1998; Sanchez-Garcia & Curras-Perez 2011).

The results of the t-statistics indicate that three constructs namely economic, social and cultural factors are statistically significant in influencing the dependant variable. Although local residents are exposed to environmental impacts, the community's perceived environmental impact however is not statistically significant in influencing the overall perception of the tourism impact on the island.

The variance inflation factor (VIF) is used in this study to detect the problem of multicollinearity which occurs when there is a high correlation among the independent variables. The VIF value is less than 10, which indicates that no serious multicollinearity problems exist in model 1.

Regression analyses for Model 2 as in Table 7 identify which of the 24 independant variables selected in this study influenced the overall perception on tourism impact. From the environmental items, only traffic congestion is statistically significant. However, the number of statistically significant economic items is greater, which include it provided more suitable jobs, increased family economy and daily expenses.

The significant variables from the social items which influence the overall perception on tourism impact include increases in government spending to build facilities for tourists; changing the way of life of the population; not

TABLE 6. Exploratory Factor Analysis (EFA)

Constructs/Indicators/Variables	Explanatory Factor Analysis –EFA (Varimax Rotation)			Reliability		
	Eigen Value	% of Variance Explained	Commulative Variance Explained	Cronbach Alpha	Factor loading	Mean Construct
Environment:	5.556	23.194	23.194	0.852		3.9648
1. You livelihood are getting better					0.820	
2. Do not increase the noise levels					0.820	
3. Solid wastes are managed efficiently					0.814	
4. Do not produce a lot of garbage					0.804	
5. Do not affect water quality					0.776	
6. Do not cause any congestion (traffic)					0.484	
7. Surrounding area/environment is cleaner					0.451	
Economic:	4.434	18.473	41.667	0.779		3.9047
1. Provide more employment opportunities					0.805	
2. Increase the community income					0.781	
3. Provide suitable jobs						
4. Encourage more tourists to come and spend their money					0.760	
5. Encourage more outside investors					0.679	
6. Increase the family economic standard						
7. Increase your daily expenses					0.660	
8. Increase the housing prices/land/housing rental					0.625	
9. Increase in financial expenses/spending of the government due to the construction of tourist facilities					0.793 0.784	
Social:	1.572	6.550	48.217	0.723		3.0933
1. Do not damage public property					0.725	
2. Do not increase the number of criminal cases					0.710	
3. Your livelihood are getting better					0.581	
4. Change the way of life					0.560	
5. Do not increase in accidents among residents					0.554	
6. Do not cause any congestion at the recreational area					0.513	
Culture:	1.378	5.740	53.957	0.669		3.0156
1. Increase your interest to meet/interact with more tourists					0.782	
2. The Langkawi residents are getting better in term of their knowledge about others socio-cultural and their life					0.678	
3. Increase community's pride in their own culture					0.602	

Kaiser-Meyer-Olkin (KMO): 0.868 dan Bartlett's Test of Sphericity: 0.000

causing damage to public property; and not increasing the number of road accidents among residents.

All three cultural items are found to be significant which are increasing interest to meet/interact with tourists; increase community's knowledge on socio-cultural practices of people outside of the community, and increase the community's pride in their own culture.

CONCLUSION AND IMPLICATIONS

The present study attempts to evaluate the perception of local community concerning the impact of the development of tourism industry on Langkawi Island. For this purpose, a survey using questionnaires as an instrument was administered between November and December of 2011. A total of 24 variables were selected to measure 4 constructs namely economic, social, cultural and environmental factors.

The empirical results indicate that most of the respondents whom are residents of Langkawi Island agreed that the development of the tourism industry brought various positive effects to the local community, especially in terms of social, economic and cultural impacts. However, this study finds that environmental factors as a construct does not influence the community's perception on overall tourism impact on the island.

The stakeholders of the tourism industry on Langkawi

TABLE 7. Findings of Regression Analysis

Model 1	Un-standardized Coefficients	Standard error		Collinearity Statistics	Model 2		
	B		t	VIF	Variables /indicators	Coefficient	T-statistic
(Constant)	1.272	0.231	5.500*				
Environment	0.061	0.046	1.322	1.130	1. You livelihood are getting better	0.035	0.832
					2. Do not increase the noise levels	0.074	1.480
					3. Solid wastes are managed efficiently	-0.009	-0.189
					4. Do not produce a lot of garbage	0.034	0.694
					5. Do not affected surrounding water quality	-0.051	-1.042
					6. Do not cause any congestion (traffic)	0.870	1.880**
					7. Surrounding area/environment of you is getting clean	0.035	0.778
Economic	0.297	0.047	6.301*	1.377	1. Provide more employment opportunities	0.082	1.640
					2. Increase the community income	-0.012	-0.289
					3. Provide suitable job	0.097	1.985**
					4. Encourage more tourists to come and spend their money	0.009	0.226
					5. Encourage more outsideinvestors	0.028	0.716
					6. Increase the family economy	0.111	2.982*
					7. Increase your daily expenses	0.075	2.309**
					8. Increase the housing prices/land/housing rental	-0.004	-0.127
Social	0.078	0.027	2.845*	1.056	1. Do not damage the public property	-0.085	-2.530**
					2. Do not increasing the number of criminal cases	-0.035	-1.012
					3. Increase in financial expenses/spending of the government due to the construction of tourist facilities	0.057	4.168*
					4. Change the way of life	0.089	3.404*
					5. Do not increase in accidents among residents	0.056	1.758**
					6. Do not cause any congestion at the recreation area	0.036	1.189
Culture	0.213	0.039	5.469*	1.317	1. Increase your interest to meet/interact with more tourists	0.204	5.948*
					2. The Langkawi residents are getting better in term of their knowledge about others socio-cultural and their life	0.081	2.601**
					3. Increase community's pride in their own culture	0.065	1.841***
R Square			0.253				
Adjusted R Square			0.247				
Std. Error of the Estimate			0.52891				
F-test			41.287*				
Durbin Watson			1.886**				

*** Significant at the $\alpha = 0.01$.
** Significant at the $\alpha = 0.05$.
* Significant at the $\alpha = 0.10$.

Island, including the federal, state and local governments, must take more proactive initiatives to provide facilities that will encourage the locals to participate in the tourism industry, especially in small scale business ventures. This can be seen in table 7 where most economic items are significant in influencing the overall perception on tourism impact. Thus exploiting all economic possibilities that will benefit the community positively is deemed crucial. These ventures will ensure active participation from the local community which consequently will result in long run sustainable development of the tourism industry on the island.

Tourism related assistance needs to be provided to the community of Langkawi Island, particularly in relation to financial investment, consultation, marketing, counseling, motivation, courses and workshops; and monitoring activities. The private and governmental sectors need to collaborate to ensure that all proposed plans and programs can be implemented effectively.

ACKNOWLEDGEMENT

This research is supported by the National University of Malaysia through FRGS GRANT (FRGS/1/2011/SS/UKM/03/17) and University Grant (PIP-2013-001).

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