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Visitor's Adaptability toward Natural Elements and Regulations in Penang National Park, Malaysia

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ABSTRACT

In 2006, Penang National Park (PNP) became the second National Park destination in Malaysia. Through PNP complaint forms, the visitor reports some discomfort conditions from other visitors, facilities, and services while in the park. Cleanliness, signage, operational time of certain facilities and guide behaviour were negatively reported by visitors. Thus, the negative conditions will have an adverse effect on PNP as a conservation area. With this in mind, the research was carried out to learn about visitor's adaptation in PNP. A total of 402 questionnaires were administered to domestic and international visitors. Some of the items in the questionnaire were further grouped into 4 concepts. Results show significant differences between the mean scores for domestic and international visitors on the concepts of regulation, active-activity, passive-activity and noisy condition, whereby the international visitors were found to be more likely to adapt to the conditions than those of the domestic. On the concept of regulation, both the international and domestic visitors could adapt toward the Park's regulation. The significance of the results will be forwarded to the PNP management for their consideration of the visitors' level of adaptation to reduce the negative impacts in the effort keep environmental sustainability in PNP.

Keywords: Adaptation level, significant aspect, negative impact, sustainability

INTRODUCTION

In 2006, Penang National Park (PNP) became the second National Park destination for the international and domestic visitors, after Taman Negara Pahang. As a young national park in the country, Penang National Park (PNP) will encounter many problems in carrying out the planned strategies for the park because not everyone can easily understand and follow the procedures (DWNP's Annual Report, 2007) that are meant for visitors who visit the place. The negative impacts caused by visitors' actions require immediate management actions; otherwise, Penang National Park will continue to lose its sustainability. As a new park which has yet to be tested, various efforts are needed to increase the number of visitors to PNP. The data obtained from the management of the PNP from 2004 – 2007 showed that the average number of visitors to the park increased by 39.03% for the domestic and this was 13.33% for the international visitors. Meanwhile, the yearly growth averaged out to about 13% for both the domestic and international visitors.

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As a reserved area, the PNP would therefore have the special rules and regulations set up to protect its integrity. The visitors are expected to abide by these rules and regulations, even though some may have difficulties adapting to them and become satisfied due to certain requirements from the park's management. This may be due to their motivations for visitors and individual potential to adjust to the different environments. According to Lindberg *et al*. (1997), the increasing number of visitors will automatically affect the function of an area, either positively or negatively. The impacts can be viewed from many aspects such as economics, socio-cultural and environmental.

The impact from the economic aspect is considered as positive as Penang National Park can attract visitors to come and spend their money at the place. On the other hand, the environmental and socio-cultural impacts will not only get positive impact, but negative ones as well. In a positive note, the increasing number of visitors will challenge the management to sustain their performance in administering the area. Moreover, they will make the PNP famous with its environment and culture, as well as the quality of their experiences during the trips to the park (Lindberg *et al*., 1997). Overall, the level of negative impacts could be seen from the 2006 PNP's Annual Report, which recorded and indicated that Pulau Pinang was the fourth highest in terms of wildlife cases in Malaysia (DWNP's Annual Report, 2007). Furthermore, PNP has it own problems. Based on the PNP complaint forms, the visitors have reported some discomfort conditions that are created by other visitors, as well as in terms of the facilities, services during their track, etc. Among other, cleanliness, poor signage, operational time for certain facilities and behaviour of guide guides have been negatively recorded by the visitors. The cleanliness of the park is dependent on the visitors' attitudes, and this aspect will determine whether some visitors are capable or not in ensuring its cleanliness. Besides regulations pertaining to cleanliness, the park has certain operational time, while the schedule is provided to consider its condition and ecosystem. Weather, animal activities, and accessibility condition affect the schedule. In other words, the presence of visitors could disturb the activities of the animals at the park. On the other hand, the condition of nature could disturb the visitors' comfort. When visiting the park, the visitors should know that as conservation area, the park has regulations that are different from resorts, to which they are requested to adapt to.

Visitors' attitude would be applied depend on their characteristic, while each visitor might have a variety characteristics. The similarities and differences of visitors' characteristics may be related to their adaptation level. Visitors may not know that their attitude will have negative effects on other visitors and on the nature. Thus, these are the reasons for enforcing regulations on all visitors at PNP. In other words, the different needs of the PNPs' entities, especially between the visitors, are expected to pose an adverse effect on the PNP as a conservation designation. According Stankey *et al*. (1999 cited in Ankre, 2007), a new environment would change the visitor's lifestyle, and the new lifestyle should be accepted. However, it depends on the personal characteristics of visitors. This changing process is known as adaptation. Adaptation needs the process, i.e. the process in which visitors can gradually adapt to a new environment or they can totally reject it. Based on the technical report of the European Environment Agency for 2007, there are two types of adaptation, namely autonomous and planned adaptations. In particular, autonomous adaptation is related to internal factors. This study specifically looked into the visitors' adaptation towards the natural attractions, whereby their adaptability is determined by their characteristics. On the contrary, planned adaptation is derived from external factors, and this particular adaptation specifically relates to visitor's adaptation towards regulations, where the management requires them to obey all the regulations imposed. To accept the planned adaptation is depending on autonomous adaptation. On the other hand, autonomous contains of internal factors, where visitors could adapt well to

the external factors if the internal factor is capable. Without the capability of internal factor, visitors could adapt but not for long, while the degree of satisfaction would be affected or it might be a negative impact to the surrounding environment. Therefore, focusing on the internal factors is important in term of minimizing the negative impacts of visitor's attitude. In items categorizing to see the correlation between the groups, this study follows that of Britvina (2005) who examined attractions as external factors, while interest, needs, values, motives, and orientations as internal factors. Even though these concepts were implied to the immigrants, the purpose of this study was to determine how adaptive immigrants affect their new environment. According to Ricardson and Loomis (2004), the visitation at a recreation site is influenced by expected climatic conditions in the area, as well by other variables which are not limited to a visitor's chosen recreation activities, travel costs, and demographic characteristics. In particular, the climatic conditions may affect visitation both directly and indirectly.

Considering the predicted impacts of tourism on the PNP, a management action is required immediately to tackle these negative impacts by analyzing the adaptation levels of the visitors' experience. This research was carried out to determine the similarities and differences between the international and domestic visitors' adaptations. Logically, domestic visitors should be adapting better than their international counterparts because of their familiarity to the geographic condition. Meanwhile, the geographic condition may be affecting the tourists' comfort, but this may not be the case for international tourists who are not familiar with the new environment. For certain people, this changing of environment can touch their feeling of adventure, because the adaptation level will appear as their special interest (Ankre, 2007). Beside the changes in the geographic condition, there are two aspects which influence the adaptation level, namely external and internal.

MATERIALS AND METHOD

This quantitative research was carried out to observe both the international and domestic visitors at Penang National Park. The average number of visitors was estimated to be around 22,672 visitors per year. According to Krejcie and Morgan (1970), the samples should be more than 379 in order to get 95% reliability. In fact, the research obtained 402 filled questionnaires, indicating that 18 % estimation over a year of visitors was achieved. A total of 28 days were taken to carry out the survey, which was started at the end of July up to August 2008. During this period, the survey was carried out every day and it was started from 09.00 a.m. to 07.00 p.m. Each questionnaire took approximately 10 to 15 minutes to complete.

Prior to the survey, a pilot study was carried out at Penang National Park to check the reliability and respondents' understanding of the questionnaires. Getting the honest answer from visitors, i.e. whether they adaptable or not, is not a simple problem, what more to answer about their adaptation towards regulations. The Cronbach's Alpha from the results of the pilot study was medium, i.e. 0.5 – 0.6. Hence, to increase the reliability, the author did some changes to the questionnaire. As a development of Britvina's categories of external aspects in adaptation level, some of the items in the questionnaire were grouped into four concepts, namely visitor's adaptation towards noise level (Cronbach's Alpha = 0.70), visitor's adaptation towards natural attraction during passive-activity (Cronbach's Alpha = 0.70), visitor's adaptation towards natural attraction during active-activity (Cronbach's Alpha = 0.72) and visitor's adaptation toward Park's regulation (Cronbach's Alpha = 0.70). The data obtained from the questionnaires were coded and entered into a database. It was analyzed using the Statistical Package for Social Science 15 (SPSS). Before using the t-test, the data were analyzed using the Exploratory Data Analysis to determine whether the data were normally distributed. It is important to note that the condition for running a t-test is that the data

should be normally distributed. Otherwise, a non-parametric test must be employed. The variables were measured using a 5 point Likert Scale (with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). In the analysis, all variables were changed into negative items. In order to summarize the table, the scale should therefore be changed oppositely (i.e. 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree). Similarly, to get the mean scores for the visitors' experience, the variables were analyzed using the Independent Sample T-Test. Meanwhile, to get the adaptation level of the visitors, a new scoring was done by summarizing them into 3 levels, namely low, moderate, and high level.

RESULTS

During the survey period of the study (June 21 to September 12, 2001), the visitors were selected randomly at five locations. The questions were asked to identify the adaptation level towards the activities and the weather. Here, the activities and weather were assumed as the external factors, while the visitors' characteristics were taken as the internal factors. The activities contained hiking, sightseeing, driving Trail Ridge Road, and others. The surveys were distributed to the respondents who took the survey with them to be completed and mailed at a later date. The mail-returned surveys were chosen because of the complexity of the climate scenarios and the amount of time required completing the questionnaire. The response rate was found to be 70%. Using the pre- and post-interview method, Dearden and Harron (1994) examined the adaptability of trekkers during their trip. Weather, activities and behaviour of hill tribes were the external factors. Meanwhile, demographic, behaviour, compatibility, sense of adventures and remoteness of trekkers were used as the internal factors. A total of 69 respondents completed their post questionnaire. The two separate 2-month periods were selected to tap the peak winter and summer trekking markets. In particular, the internal factor was an independent factor which derived from the visitors' personality. Other characteristics, such as age, gender, education, would affect the interest, needs, values, motives, and orientation amongst visitors. For example, kids and adults have different motivations in their visitations to PNP; kids usually want to swim at the

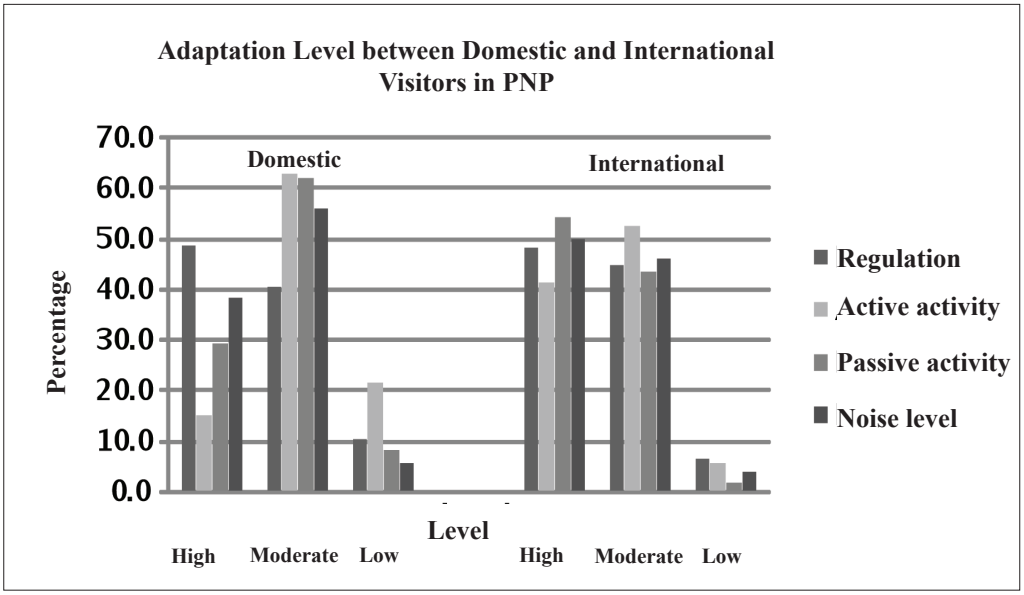

Fig. 1: The percentage of adaptation level in each concept

TABLE 1
Studies previously carried out on adaptation level

	ADAPTATION	Britvina (2005)	Richardson & Loomis (2004)	Dearden & Harron 1994)
INTERNAL FACTOR	Nationality		V	V
	Behaviour of visitors			V
	Sense of remoteness			V
	Sense of adventure			V
	Education	V	V	V
	Motivation	V	V	V
	Gender	V	V	V
	Needs	V		
	Age	V	V	V
EXTERNAL FACTOR	Number of group			V
	Weather		V	V
	Activity	V	V	V
	Behaviour of trail			V

TABLE 2
The number of visitors to PNP from 2003 to 2007

Visitors' place of origin	Year				
	2003 (N1)	2004 (N2)	2005 (N3)	2006 (N4)	2007 (N5)
Domestic	5271	16830	9238	22982	26036
International	867	4938	3309	4502	6163
Total	6138	21768	12547	27484	32199

(Adopted from PNP manager's data)

beach, while adult visitors want to sit and have gathering at the beach. In many cases, the visitors' internal factors were found to not only impose negative impacts on the nature, but on other visitors as well.

Fig. 1 shows that on average, 10% of the visitors in both the groups visiting PNP were at low level of adaptation, which meant that they could easily adapt themselves with the new environment in the park. According to Goodwin, Kent, Walpole, and Ward (1997), PNP has a special regulation which is known as a conservation area, whereby the visitors could maintain their attitude. It was proven that based on the percentage of the visitors' adaptation towards regulations, i.e. almost 50% of both groups were found to be at high level. The visitors' adaptability towards the regulation is important to control the sustainability of the park as their presence could negatively affect the area. Moreover, visitors who could not adapt with the regulations have a higher possibility of causing negative impact to the park (Goodwin *et al.*, 1997).

The results reveal significant differences in the mean found for the domestic and international visitors in term of their responses towards active-activity concept (t=7.17, p=0.01), passive-activity concept (t=5.01, p=0.01), and noise level concept (t=2.20, p=0.03). These indicated that international visitors were more likely to easily adapt than domestic visitors in the three concepts. On the other hand, the concept on the regulation had no significant difference in determining the similarities in the adaptation level of both the domestic and international visitors towards the park's regulations, as presented in Table 3.

The significance of the results illustrated that the international visitors were more likely to adapt to the existing conditions rather than the domestic ones. This was found to be contradictory for the common where domestic visitors were more likely to adapt towards the conditions as compared to the international visitors. This was determined by looking at the percentages of the internal aspects in each group to find the differences in the characteristics between the international and domestic visitors. Based on the concept developed by Britvina (2005), the number of destinations, gender, age, duration, reasons for visiting as well as the frequency of visits were considered as the internal factors. Further details of the characters of the two groups are given Table 4.

By comparing the mean scores, many differences were found between the international and domestic visitors. For the domestic visitors, the number of destinations and duration of stay were higher than those of the international counterpart. 58.1% of the international visitors were male and the mean age was older (thirty-three years old) than the domestic visitors (twenty-three years old). The motivation or reasons for their visits were also found to be different. The international visitors stated that they wanted to experience the natural environment, while the domestic visitors'

TABLE 3
Adaptability level of domestic and international visitors

	Nationality[1]			
Adaptation towards :	Domestic	International	*t*	*p*
Active-activity	3.0	2.5	7.17	0.01
Passive-activity	2.7	2.3	5.01	0.01
Noise level	2.6	2.4	2.20	0.03
Regulation	2.5	2.5	0.99	0.92

[1]Cell entries are means and means are based on 5 point Likert scale 1= strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree

TABLE 4
Domestic and international visitors' background information

Character	Mean			
	Nationality			
	Domestic	N	International	N
First time visit	65.6 %	282	81.2 %	101
Reason to visit:				
Nature lover	26.1 %	283	60.2 %	103
Just visit	28.6 %	283	28.2 %	103
Recreation	40.6 %	283	35.0 %	103
Research	18.7 %	283	5.8 %	103
Gender:				
Female	44.4 %	295	41.9 %	105
Male	55.6 %	295	58.1 %	105

purposes were for sight-seeing, recreation, and research. It was also found that 81.2 % of the international visitors were the first time visitors. Based on the differences in the visitors' characters, the relationship between the external factors (activity, regulation, and noise level) and the internal aspects (number of destination, gender, age, duration, reason for visit, first time visit, etc.) were examined to identify the significant attributes. The results indicated that not all of the internal factors influenced their adaptability towards the external factors.

ADAPTABILITY TOWARD NATURAL ATTRACTION

The main attractions in the national park include the nature, including flora, fauna, and the view. The visitors would explore such attractions when they were doing their activities, which are either active or passive.

Active Activities

During the active activity, the visitors would experience the natural environment while they were doing activities like climbing, tracking, swimming, camping, fishing, etc. The results showed a significant difference between the international and domestic visitors, whereby the former were more likely to adapt easily as compared to the latter when carrying out active activities. By running the description analysis in SPSS 15.0, the domestic visitors showed a high adaptation level towards the natural elements during active activities (i.e. 15 % only), while the international visitors scored 41.30% for the same aspect (see *Fig. 1*). Such difference might be caused by several factors. Among other, the mean of the internal significant attributes in this concept consists of the number of destinations, with an average of two places visited, which age was about thirty-three years old, and the duration of stay was around six hours of visit (Table 5). The other significant attributes were indicated by the significant difference (t) for the motivation, i.e. for the nature or not for research (Table 6). Based on results, the males were more likely to adapt toward active activities than the female visitors (Table 7). Meanwhile, gender and age were also found as significant attributes in the previous study (Ankre, 2007), whereby the male and young adults aged 15-43 year old showed significant difference or they have higher adaptation level towards active activities. Finally, the most significant attribute was because most of the internationals had never

TABLE 5
Domestic and international visitors' experience

Character	Nationality			
	Domestic		International	
	*	N	*	N
Duration of stay	12 hours	295	6 hours	105
Number of animal seen	2 species	287	3 species	102
Number of destination	4 places	276	2 places	98

* Cell entries are average of occurrences

heard about Penang National Park. These results might be caused by the information received about the PNP's security, which recorded that Pulau Pinang was ranked the fourth highest in having cases involving wildlife in Malaysia (DWNP's Annual Report, 2007), in which it had affected the visitors' anwxiety.

Passive Activities

During passive activities, the visitors experienced the impacts of the environmental changes by just viewing the natural environment and experiencing the humid weather. Just like the active activities, there was a significant difference between the international and domestic visitors, whereby the international visitors were more likely to adapt easily as compared to the domestic visitors for the passive activities. In particular, 29.50% of the domestic visitors were recorded to have a high adaptation level towards natural element, while this was 54.30% the international visitors (*Fig. 1*). The significant attributes included the number of destinations (with the two places) visited, the average age of thirty-three years old, duration of stay (for six hours), and the motivation for nature (Table 5). As compared to the active activities, there were differences in the significant attributes, where gender was not included. Moreover, the motivation was also not indicated for recreation, but for others.

ADAPTABILITY TOWARD NOISY CONDITION

Sound is a sensitive factor at and for certain places. In some cases, people can tolerate or even pleased with disturbing sound if they thought that it would enhance the sense of experience, such as at the playground, climbing, bungee jumping, etc. As for National Park, noise must be controlled for the area and to the expectation of the visitors. This is because sounds of nature are more interesting and they give special effects to the visitors, such as sounds of monkeys, birds, fish, swaying leaves, etc. In fishing hamlet, it could be positive to hear the sound from fishing boat while hearing a motorboat when on a sea cliff in sunset could be viewed as negative (Ankre, 2007). As illustrated in Table 3, the international visitors were more likely to adapt towards the noise level in the park than the domestic visitors. This finding indicates that the domestic visitors prefer silent situations compared to the international guests. The significant attributes of the international visitors' characteristics include the number of destinations (with two places visited), and the duration of stay (for six hours of visit). This might also be caused by 56.80 % (Table 4) of the visitors were first-timers to the place and most of them did not know about Penang National Park before their visits.

In considering the significant attributes, it is also helpful to know "curious to know" or the reasons why the domestic visitors were

TABLE 6
Adaptability level based on reason for visiting PNP

	Nature lover[1]				Pure visit[1]				Recreation[1]				Research[1]			
Adaptation towards :	Yes	No	*t*	*p*	Yes	No	*t*	*p*	Yes	No	*t*	*p*	Yes	No	*t*	*p*
Active-activity	2.7	3.0	2.83	0.01	2.8	2.9	1.07	0.29	2.9	2.9	0.66	0.51	3.1	2.8	2.70	0.01
Passive-activity	2.5	2.6	2.09	0.04	2.6	2.6	0.15	0.89	2.5	2.6	1.26	0.21	2.7	2.5	1.24	0.22
Noise level	2.5	2.5	0.75	0.45	2.5	2.5	0.17	0.87	2.5	2.5	0.30	0.76	2.4	2.5	1.48	0.14
Regulation	2.5	2.5	0.64	0.52	2.5	2.5	0.81	0.42	2.6	2.5	1.61	0.11	2.2	2.6	3.37	0.01

[1]Cell entries are means and means are based on 5 point Likert scale 1= strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree

TABLE 7
Adaptability level based on gender

Adaptation level towards:	Gender[1]			
	Female	Male	*t*	*p*
Active-activity	2.9	2.8	1.56	0.12
Passive-activity	2.6	2.6	0.21	0.83
Noise level	2.4	2.6	3.09	0.02
Regulation	2.4	2.7	3.76	0.01

[1]Cell entries are means and means are based on 5 point Likert scale 1= strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree

more sensitive to noise than the international ones. Another conclusion could be derived by concentrating on the mean of the domestics' characteristics which touched on the aspects of their inadaptability towards noise level. This might be influenced by the number of destinations (with an average of four places visited), and that they were not visiting the park for the first time (Table 8). These additional aspects are more comprehensive to be used in understanding the causes of the inadaptability of domestic visitors toward noisy condition. When the visitors have visited four destinations or more, they may be encouraged to have a better condition. Moreover, this was not their first visit to the place so they will definitely concentrate on the quality of experience than the quantity. Meanwhile, the international visitors were found to focus on the opposite. As a dominant character of the international visitors, 81.2% came for the first visit while 60.2 % stated nature lover as the reason, and they were curious to explore the nature of the park more than that of the domestic visitors.

ADAPTABILITY TOWARD REGULATIONS

There is no compromise between regulations and visitor's attitude, so regulation is categorized as one of the planned adaptations (European Environment Agency Technical Report, 2007). This type of adaptation is influenced by external factors. It means the visitor's adaptability is 'forced' by the park management to obey the regulation. There were six questions on the attitude toward flora, fauna, littering, and forbidden needs such as smoking, drinking alcohol, and bringing beverages. Generally, the results show that no significance difference was found between the international and domestic visitors, as both of the groups could adapt toward the regulations well. Although it is not easy to get their honest answer, result from the Cronbach Alpha is quite high, i.e. 0.7. There was a significant difference between the genders as a significant attribute of adaptation level towards regulations ($t = 3.76$, $p = 0.01$). However, gender was the only aspect which describes an adaptation level. For example, female visitors were found to be more adaptable than their male

TABLE 8
Adaptability level based on first visit

Concept	Mean of adaptability based on first visitation				t	p
	First time visitation					
	First time visitor	N	Repeat visitor	N		
Active-activity	26.3 %	266	48.1 %	116	-0.92	0.36
Passive-activity	48.9 %	268	71.4 %	116	-1.69	0.93
Noisy condition	56.8 %	266	56.7 %	116	-2.21	0.03
Regulation	51.5 %	268	48.6 %	116	-1.09	0.28

[1]Cell entries are means and means are based on 5 point Likert scale 1= strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree

counterparts towards the regulations (Table 7). In fact, the visitors should manage their attitude towards the surrounding ecosystem in the park because human is a part of the landscape and their attitude will definitely affect their environment, either directly or indirectly (Burgeru, 2000).

DISCUSSION AND POLICY IMPLICATIONS

Adaptation is a process through which societies make themselves better able to handle an uncertain future (UNFCCC, 2007). In the process of adaptation, visitors can gradually feel better with the new environment or they can totally reject it. It is not easy to adjust to a new environment because some people cannot adapt to other lifestyle, through food, water and weather. The the differences in visitors' cultural and characteristic background will influence their (domestic and international) adaptability. There are six different entities involved in the ecotourism system of the national park; these include visitors, natural areas and their manager, local communities, business, government, and non-government organization. This ecotourism system can generate both parasitism and mutual symbiosis among the entities (Lindberg *et al*., 1997). When an entity has its own needs towards the national park, there may be conflicts for the other entities. It is impossible to assume that all the entities are in good condition. Thus, to handle such situation, the park's management has to plan a strategy to minimize the parasitism and maximize the mutual symbiosis. Based on the results derived in this study, visitors in PNP have similarities in their adaptability level in the regulation concept whereby both of the domestic international visitors could adapt towards the regulation concept in PNP. On the contrary, the differences were found for the other concepts, whereby the international visitors were more likely to adapt toward active activities, passive activity and noise level than the domestic visitors. The differences in the visitors' culture and characteristics will also influence their adaptation levels. As explained by Carr (2000), the culture and characteristics of a visitor led to various needs, lifestyle, and attitude. The finding for the visitors' activities seem to agree with the result obtained in a study by Madge (1996) who also found that anxiety feeling that is caused by age and gender as a part of the contributing aspects of geography anxiety. Similarly, Ankre (2007) explained that the silence of visitor depends on three concepts attitudes, experiences, and motives; in fact, silence is not absolute in nature. Adaptability is not easy to be measured, as there are many aspects to be considered, which include internal and external aspects (Britvina, 2005). Therefore, successful management could be achieved if the needs of the travellers from the different cultures are understood and they are accurately responded to (Yuksel, 2004). In this way, the negative impacts caused by visitor's attitude can be reduced through these environmental indicators, including fragility of the ecosystems and biodiversity, waste disposal, water consumption, intensity of land use and physical impacts, protection of the atmosphere, noise level, and visual impact (Lim, 2003). Based on the results obtained, the study proposed the management to enhance the quality of visitors' experience at Penang National Park. The recommendations are further explained below:

Zoning and Time Schedule for Fishing Activity

Penang National Park is surrounded by fishing villages, where fishermen fish in the PNP area. Such continuous activity will damage the water ecosystem if the local demand for fish becomes higher than the amount of fish available. Thus, the management should create zone for the breeding area of fish and other marine ecosystem according to their needs. This is particularly important in maintaining the sustainability of the reserved park.

Carrying Capacity

Nowadays, a high priority is given to increase the number of visitors to the recreational areas as this will also increase the profit gained through

visitors' expenditures at the park (Hsu, Tsai and Wu, 2009). In contrast, Brown, Turner, Hameed and Bateman (1994) stated that the visitors' presence would affect the sustainability of the ecosystem at the conservation area. The results illustrated that the international visitors were more likely to adapt toward the level of noise level, suggesting that the domestic visitors prefer silent and tranquil situation. However, the management should limit the number of visitors to the recreational places because the nature would be affected by the presence of too many visitors, and their comfort would also be affected by the presence of each other (Goodwin *et al*., 1997). Thus, the capacity and capability of handling visitors in each area and at one time should be taken into consideration. The average duration of stay for the domestic visitors was 12 hours, while this was 6 hours for the international visitors, whereas the mode of the earlier group's visit was only 5 hours as compared to 2 hours for the latter group. This finding showed that most of the domestic visitors were overnight visitors while the international visitors only came for day time visits. These durations affected their adaptation level, whereby the international visitors were found to easily adjust to the natural elements and noise level as compared to the domestic group. Therefore, the management should control the number of visitors and limit the duration of stay during the peak seasons to enhance their adaptation level during the trip.

Implications on the Regulations at the Park

The regulation could never stand alone without the responds from the all related entities (Samawi and Najjar, 2007). The implication of regulation reflected the credibility of the park's management in enforcing the visitors to obey the rules. In addition, the way they persuade all the entities at the national park to work together is very important. Different visitors may have different characteristics and backgrounds, which therefore show different potentials to understand and follow the regulations in the area. Moreover, besides being a conservation park, the PNP is also an ecotourism place, where the visitors come to spend their leisure time in a variety of ways. Based on the results gathered on the regulation, there was no significant difference between the domestic and international visitors in terms of their adaptability towards the park's regulation. However, it was rather surprising to find a significant difference between the groups in term of gender. The female visitors were found to more likely to adapt to the regulations than males. Thus, the management should concentrate more on the male visitors' attitude and needs, and the possible factors leading to such responses should also be studied. As the existing regulation of the park cannot be changed, the visitors should obey them. This poses a big challenge for the park's management, particularly in trying to persuade and get the cooperation from all the visitors, regardless their nationality or gender, and other responsible entities at the national park.

Beverage Shop in Kerachut Beach

The Kerachut beach is the furthest destination that the visitors can reach at the park. To reach the place, one has to walk for at least three km or about two hours from the main entrance, Teluk Bahang. Nowadays, the management allows the visitors to bring their own food and drinks from outside. Unfortunately, this proved to be troublesome for the visitors because they have to carry heavy bag packs along the track to Kerachut Beach. The survey indicated that about 10% of the visitors reported that food and beverages at Kerachut beach were not necessary. Based on the findings of the present study, however, it is recommended that the management of Penang National Park consider the visitors' adaptation levels towards the performance of the park. This helps to reduce negative impacts while maintaining the sustainability of the conservation area, as it could only be achieved if there is integrity between the entities (Brown *et al*., 1994). If the visitors are allowed to bring their own food while tracking, there are possibilities that they will litter their rubbish after consuming the food and drinks that they have brought, and this is clearly against

the park's regulations. In order to avoid such incident, the management should provide shops selling food and beverages at Kerachut Beach.

CONCLUSIONS

Both of the domestic and international visitors could adapt towards the regulation concept at PNP. As for the three concepts, on the other hand, differences were found whereby the international visitors were more likely to adapt towards active-activity, passive activity, and noise level than the domestic visitors. Both the findings and the recommendations resulting from the present study will be proposed to the Management of Penang National Park. A better understanding of visitors' adaptation is apparently necessary in order to boost the tourism market. This study has also highlighted several limitations; among other, some visitors were not able to answer the questionnaire for varied reasons. As a result, a longer period of time (e.g. more than 2 months) for data collection should be allocated in future research. It is also recommended that future studies explore other aspects which are correlated with visitors' adaptability, particularly their adaptation and acceptance towards the existing regulation.

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