

## Public Scenic Beauty Preferences of Highland Environment<sup>i</sup>

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### Abstract

This paper presents scenic beauty assessment of highland environment, in which the study area was Cameron Highlands, Malaysia. There were two methods used in the assessment; photographic questionnaire survey and semi structured interview. Both methods were designed to assess public scenic preferences and the impacts of Highland Management Practices (HMPs) on scenic preferences. Coloured photograph was the survey instrument used to assess the scenic preferences. The respondents (tourists) were asked to rank a landscape scene in each photograph using a ranking scale from 1 to 12; rank 1 was the most preferred, while rank 12 was the least preferred. An analysis using frequencies (percentages) show that the tourists preferred the scene of tea plantation the most (rank 1); the next preferred scenes were the hill (rank 2), waterfall (rank 3), and forest (rank 4). The least preferred was the commercial scene (rank 12). The next least preferred scenes were the residential housing (rank 11), vegetable farm on terraced land (rank 10), flat landscape (rank 9) and vegetable farm on flat land (rank 8). A semi structured interview was used to support these findings. A total of 10 numbers of local residents was interviewed. Similarly, an analysis using frequencies (percentages) show that preference for tea plantation scene was the highest (rank 1). The next preferred scenes were the forest (rank 2) and hill (rank 2). The least preferred scenes were the vegetable farm (rank 5), waterfalls (rank 4) and residential housing (rank 4). In summary, the results generated from two different methodologies indicate that the patterns of scenic preferences for highland scenes between two different groups of respondent have close similarity. The second part of the survey determined the impact of HMPs on the scenic preferences of tourists using 5 points likert scale; (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree). The analysis using frequencies (percentages) shows the impacts of HMPs on the scenic preferences are: components of the natural beauty (e.g. forest, hill, waterfall and lake) have positive impact; components of management activities (e.g. clearing of forest and flattening of hill) have negative impact, where as leaving forest to grow naturally, maintaining hill original landform and planting trees originated from local species along street found enhancing highland's scenic beauty. Finally, the components of land use namely commercial and residential developments provide negative impact, where the land uses of vegetable farm, golf course, resort, and tea plantation provide positive impact. Results of interview show that the local residents agreed that the current HMPs have negative impact on their scenic preferences. In short, several land use (e.g. residential and agriculture) and management activities (e.g. forest clearing and hill flattening) have contributed to this. Similarly, the results generated from two different methodologies indicate that the impacts of HMPs on the scenic beauty preferences of two different groups of respondent have close similarity. Overall, findings have implication to the local authorities of Cameron Highlands because the results found shall assist them in

future HMPs decisions. These decisions are important towards establishing good highland environment as well as sustaining the tourism industry here. Importantly, the HMPs decisions must not only involve the local authorities. Inputs from the publics should also be considered as important.

**Keywords:** Public, Scenic beauty, Preferences, Assessment, and Highland Management Practices (HMPs)

## **1. Introduction**

Since scenic beauty has significant implication to tourism industry, thus, appropriate HMPs are necessary in order to maintain this visual pleasure. Among various highlands of Malaysia, Cameron Highlands was selected as the study area. Summary of Allen (2005) reveals that the highland has a unique scenic beauty. It is a proud natural heritage of Malaysia, and one of the long - established tourist destinations (Khairulmani, 1998). The District Council and the Land Office of Cameron Highlands are the agencies that are responsible for the HMPs here. Although both of the agencies are aware of their tasks, differences in management policy or regulation between them can complicate the HMPs decisions. Importantly, management decisions that consider visual aspect of scenic beauty can be used to develop and manage natural landscapes effectively (Jamilah, Ahmad Makmom, Manohar and Zaliah, 2006). This is because the result of HMPs can cause implication to sensitive landscape. The implications can be explained through tourists' preferences. Therefore, as they perceive a landscape scene, they are able to state the scenic beauty of the scene. In another case, the work of Tahvanainen, L., Tyvainen, L., Ihalainen, Marjut, Vuorela, N., and Kolehmainen, O., (2001) supports the idea that the main part of a landscape perception occurs through the sense of sight. Parallel to that, the paper describes the assessment of scenic beauty of highland environment using publics' (e.g. combination of local residents and tourists) preferences for landscape scenes and the impacts of HMPs on their scenic preferences.

## **2. Research Methodology**

A photographic questionnaire survey was used to assess publics' (tourists) scenic preferences for several highland scenes. Secondly, the method assessed the impacts of HMPs on the scenic preferences. This method was associated with two techniques of collecting data; exploratory field observation, and perceptual assessment. These techniques were guided by the approach as introduced in Clay and Daniel (2000). Frequencies and percentages analysed both the data relating to the scenic preferences and impacts of HMPs on scenic preferences.

### **2.1 Exploratory Field Observation**

The exploratory field observation was carried out in early February 2006 at three different locations (e.g. Ringlet, Tanah Rata and Brinchang). Babbie, (1979), notes that the technique can provide a comprehensive perspective about ones' real perceptions at site. Here, the main purpose of the field observation was to observe the relevant scenic indicators that were probably associated with the HMPs and therefore, affect the scenic beauty of Cameron Highlands.

A number of highland scenes were recorded using colour photographs. Photographs can be significant evidence for the purpose of making conclusion. Based on the scenes in the photographs, the research identified the types of management that are currently practised at Cameron Highlands. These are the HMPs variables, which were grouped into three scenic indicators; natural beauty, management activity and land use. **Table 1** shows the respective scenic indicators.

**Table 1:** Scenic indicators that were identified during an exploratory field observation

Scenic Indicators	Management Variables
1. Natural beauty:	Hill, Forest, Lake, and Waterfall
2. Land use:	Residential, Commercial, Golf course, Vegetable farm, and Tea plantation
3. Management activity:	Hill flattening, Forest clearing, and Street planting

## 2.2. Perceptual Assessment

The perceptual assessment technique was used to collect data relating to scenic preferences for highland scenes. This research had adopted the approach implemented by Clay and Smidt, (2004) and Clay and Daniel (2000). Perceptual assessment is incorporated in the psychophysical paradigm as conceptually discussed in Zube et al. (1982) and Daniel and Vining (1983). The approach to this paradigm consists of two parts; *psycho* and *physical*. The former was related to the respondents' perceptions on scenic beauty, while the later was related to the scenic indicators.

### a. Photographic inventory

Photographs were used as surrogates to highland scenes. It is the instrument that is commonly used to assess the scenic beauty of landscapes (Clay and Daniel 2000 and Shuttleworth, 1980). In relation to that, Palmer (1998) notes that the ratings scale using photographic quality simulations is a reliable instrument used to evaluate scenic values. A series of sampled colour photographs were taken along walks at several locations (e.g. Tanah Rata, Ringlet, and Brinchang), and their surroundings as recommended by Daniel and Boster (1976). Photograph was part of the instrument of the photographic questionnaire survey.

The photographic inventory was carried out for three days (26<sup>th</sup> - 28<sup>th</sup> October 2006). A total of 149 coloured photographs were taken during this inventory using a hand held 28mm wide angle digital camera with 7.2 mega pixels. The inventory was guided by the identified scenic indicator (as shown in **Table1**). The photographs taken were printed in colour on A3 paper using laser printer. A total of 120 photos were presented to the experts for the classification purpose. The rest of the photos were discarded due to poor scenic quality, redundancy of scenes or irrelevant scenic indicators.

### b. Scenic indicators assessment

The scenic indicators assessment is associated with an expert paradigm as conceptually explained in Zube et al. (1982) and Daniel and Vining (1983). The use of expert based assessment was to minimise the element of biasness. The experts, with design background had voluntarily classified the photographs based on three scenic indicators (natural beauty, management activity, and land use) as previously

identified during field observation. Based on the calculation of frequencies, the highest selected count of photographs from each classification was selected. During the data collection, 12 samples of coloured photographs printed on A3 size of paper were presented to respondents for scenic ranking (e.g. 1 to 12 ranking system).

### 2.3 Photographic Questionnaire Survey

The survey was continuously conducted at Cameron Highlands for a period of a month, from 1<sup>st</sup> May 2007 to 31<sup>st</sup> May 2007. The format of the survey was divided into 2 sections. Section 1 dealt with the demographic background and the social characteristics of the respondents. The respondents were asked to state their gender, age, place of origin, level of education, occupation and income. The instrument was a close – ended written approach. On the other hand, Section 2 asked the respondents to rank 12 scenes from the coloured photographs given with ranking 1 to ranking 12. Rank 1 was the most preferred scene, while rank 12 was the least preferred scene.

Finally, Section 3 asked the respondents to state their agreement/disagreement to the effect of HMPs on scenic beauty using a number with graded response. The format of the responses was highly structured as recommended by Daniel and Boster (1976). The graded responses were paired with forced statements using 5 points likert scale; (1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; and 5 = Strongly agree).

#### a. Sampling strategy

The selection of the samples was based on the stratified systematic sampling method. The sample size obtained was 439 units. The percentage of the response rate was 89%.

#### b. Statistical analysis

Both frequencies and percentages calculated the scenic preferences and the impact of management practices using the Statistical Package for the Social Science (SPSS) for windows, version 12.0.

### 2.4 Interview

Interview was the method used to support the findings of the photographic questionnaire survey. The objectives of the interview were to identify the scenic preferences and determine the impacts of HMPs on the scenic preferences. The interview was a semi structured approach using an open ended question. The data collection was conducted at the study area from 1<sup>st</sup> to 3<sup>rd</sup> February 2007. The respondents were the local residents. A total of 10 respondents were involved in the interview.

The approach to the method was face to face interviewed, which was agreed by Babbie, (1979) as the typical approach. All the conversations were taped. The written instrument was used to record the demography information of the respondents. The taped conversations were transcribed and later analysed. Frequencies and percentages were used to translate using specific themes in order to transmit meaningful results.

#### a. Analysis strategy

The data collected from the interview were analysed using content analysis technique. Descriptive statistics (frequency and percentage) were used to describe the social characteristics of the respondents. Further, these statistics were also used to analyse

the data relating to the scenic preferences and the impacts of HMPs on scenic preferences..

### 3. Results and Discussion

Both the photographic questionnaire survey and semi-structured interview that evaluated the scenic preference and impacts of HMPs on scenic beauty of Cameron Highlands were having significant similarity in results. The following discussions are based on the three scenic beauty indicators; natural beauty, management activity and land use.

#### 3.1 Scenic Beauty Preferences

Results generated from the survey show that the tourists preferred the tea plantation scene the most (rank 1). The next preferred scenes were the hill (rank 2), waterfalls (rank 3) and forest (rank 4). The least preferred scene was the commercial development (rank 12). The next least preferred scenes were the residential housing (rank 11), vegetable farm on terraced land (rank 10), flat landscape (rank 9) and vegetable farm on flat land (rank 8). **Table 3** summarises the result obtained from the ranking of 12 highland scenes using the photographic questionnaire survey method.

**Table 3:** Results on scenic preferences for highland scenes using photographic survey

Frequencies	Percentages	Scenes	Rank	Std.
137	31.2%	Tea Plantation	Rank 1	2.889
97	22.1%	Natural Hill	Rank 2	3.000
69	15.7%	Waterfall	Rank 3	2.857
43	9.8 %	Natural Forest	Rank 4	2.757
29	6.6%	Resort	Rank 5	3.059
18	4.1%	Golf course	Rank 6	2.923
17	3.9%	Lake	Rank 7	3.117
13	3.0%	Vegetable farm on flat land	Rank 8	2.600
6	1.4%	Flat landscape	Rank 9	3.011
5	1.1%	Vegetable farm on terraced land	Rank 10	2.474
3	0.7%	Residential	Rank 11	2.359
1	0.2%	Commercial building	Rank 12	2.177
439	100%			n

The question posed: “Please rank your preferences for the landscape scenery in the photographs using a response of scale 1 to 12. Rank 1 being the most preferred, while rank 12 was the least preferred”.

The results have been supported by the results obtained from the interview. It is evidenced that there are similarities in scenic preferences from both methodologies. Further, there is sufficient evidence that the difference in the scenic preferences between both results is fairly insignificant.

Data relating to the interview were analysed using frequencies and percentages. The respondents of the local residents preferred the tea plantation scene the most (rank 1). The next preferred scenes were the forest (rank 2), hill (rank 2), flower gardens (rank 3) and resort (rank 3). The least preferred scene of the local residents was the vegetable farm (rank 5). The next least preferred scenes of the local residents were the residential housing (rank 4), and waterfalls (4).

Convergence of results illustrates the general patterns of scenic preferences for highland scenes irrespectively to the two different methodologies and response groups. **Table 4** indicates the summary of the result.

**Table 4:** Summary of result on the scenic preferences for highland scene using interview

Frequency	Scene Preferred	Rank (LIKED)
6	Tea plantation	1
2	Forest	2
2	Hill	2
1	Resort	3
1	Flower	3
Frequency	Scene Preferred	Rank (DISLIKED)
2	Waterfall	4
2	Residential	4
4	Vegetable Farm	5

**Note:** Rank 1 was the most preferred scenes, while rank 5 was the least preferred scenes.

### 3.2. Impacts of HMPs on scenic Preferences

Result of the survey shows that all the components of the natural beauty indicators (forest, hill, waterfall and lake) have positive implication. Result generated from the interview shows that only two components of the natural beauty indicator (forest, and hill,) have positive implication. The factors that contribute to the difference are subjected to past experience and memory. So, the difference can be accepted as fairly insignificant. Result generated from the interview shows that only two components of the natural beauty indicators (forest, and hill,) have positive implication. Result of the survey further shows that all the components of the natural beauty (forest, hill, waterfall and lake) have similar implication. The factors that contribute to the difference in scenic beauty preferences between the two methodologies are subjected to past experience and memory. So, the difference can be accepted as fairly insignificant.

Results generated from the survey show that two components of the management activity indicator (forest clearing and hill flattening) have negative implication. Further, result shows that by leaving the forest to grow naturally, maintaining the original landforms of hill and planting on street can enhance the scenic preferences. Result generated from the interview shows that these components have positive implication as well.

Further, result generated from the survey shows that two components of land use indicator (residential housing and commercial development) have negative implication. One of the components of the land use (tea plantation) has proven to have the most significant positive implication. Result of interview shows that two components of similar indicator (residential housing and vegetable farms) have negative implication. Interestingly, result of the survey shows that the component of the land use indicator (vegetable farm) has positive implication. In summary, it is

evidenced that the results obtained from two different methodologies have significant similarity. Therefore, the results obtained had shown the impacts of HMPs on the scenic beauty of Cameron Highlands.

#### **4. Conclusion**

Based on the three scenic indicators (e.g. natural beauty, management activity and land use) the research had analysed the scenic beauty of highland environment. All the components of the natural beauty (natural forest, natural hill, waterfall and lake) proved to have positive and significant scenic beauty. The components of management activity (e.g. forest clearing and hill flattening activities) proved to have negative scenic beauty. Interestingly, the activities of maintaining the original landform of hill, leaving forest to grow naturally, and planting street with plants originated from the highland are preferred for the management activity. Finally, several components of the land use (e.g. tea plantation, golf course, resort) proved to have positive and significant scenic beauty. The scenic beauty of the tea plantation proved to be most significant scene, while the least significant scenes are the residential housing and commercial development. The scenic beauty of the vegetable farm is not fully substantiated in this research.

Further, the current HMPs prove to implicate the scenic preferences of Cameron Highlands. Overall, the findings of this research are significant because they provide objective scenic beauty information, which are useful to the disciplines of landscape planning, and highland management (Palmer and Hoffman, 2001). The intrinsic scenic qualities or elements of a landscape, which can be objectively stated, can be used for HMPs decisions making (Zube et al., 1982). Publics' scenic preference for landscapes of Cameron Highlands can assist both the District Council and the Land Office here in managing the highland more effectively. The findings can also assist policy makers, planners, developers, or any other related institutions to make decision on matters pertaining to the development, management, and scenic beauty protection wisely.

The scenic landscapes can be associated with the extended economic benefits for certain region (Zube, 1982). In the case of Cameron Highlands, the economic benefits are seen to provide advantage to the state of Pahang. Tourism and recreational activities may receive positive accolades through proper HMPs of scenic landscapes. This is true when the scenic value is said to affect the overall quality of tourism or a recreational experience (Daniel and Vining, 1983).

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<sup>i</sup> This paper is a modification of several journals and proceedings by Jamilah Othman

- a. National Conference on Environmental Design (UMRAN 2009)
- b. 7<sup>th</sup> International Ecocity Conference (Ecocity World Summit 2008)
- c. Postgraduate Colloquium UPM (2008)
- d. International Conference on Environmental Research and Technology (ICERT) 2008
- e. International Journal of Business and Social Science (IJBS) – “Scenic Beauty Preferences of Cameron Highlands Malaysia: Local versus Foreign Tourists (2011)
- f. The International Journal – Interdisciplinary Social Sciences - “Assessing the Convergence of Scenic Preferences for Highland Scenes Using Photographic Survey and Interview Methodologies” (2008)

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