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Assessing scenic beauty of nature-based landscapes of Fraser's Hill

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Abstract

This study documents results on scenic beauty preferences for the landscapes of Fraser's Hill. The results indicate that i) natural landscapes have influenced the tourism industry of Fraser's Hill. ii) landscapes with good ecology and man-made attributes have significant relationship to scenic beauty iii) most tourists preferred viewing the landscapes of forest, hilly landform and architectural heritage, iv) most tourists were less preferred for the landscapes of water fall and lake. In conclusion, the attributes of forest, hilly landform and architectural heritage have significant scenic value. The insight may suggest that scenic beauty can be an indicator to good ecology of landscapes of Fraser's Hill.

1. Introduction

The objective of environmental policy and act is to minimize impacts of development on the natural resources. Parallel to that, the best Landscape Management Practices (LMPs) is also necessary to safeguard and protect many sensitive ecosystems. LMPs include identifying, assessing, evaluating, projecting, manipulating and monitoring of nature-based landscapes with scenic importance. It is evidenced that scenic beauty is the major draw of visitors to the natural landscapes such as forests, lakes, and highlands [1], [2].Thisshall increase the monetary value of the natural areas [3]. Similarly, scenic value, nice climate and recreational opportunities of highland landscapes such as

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Fraser's Hill have potential to influence the tourism industry of the country. The hill is one of the most popular hill stations of the Peninsula Malaysia. It has both natural and man-made structures that have been the proud heritage of the country. The architectural heritageand the natural landscapes of Fraser's Hill are observed to implicate tourists' visitation.In relation to that, this study assessed the tourists' scenic preference for the landscapes of the hill.

2. Background of scenic preferences and assessment

The study of scenic preferences involves high levels of agreement and predictability that can be achieved through public or expert assessment [4], [5]. In most cases, nice view is said to correlate to the natural features of alandscape. Similarly, Hammitt, Patterson, & Noe [6], agree that the outcomes of sightseeing may directly related to the types of LMPs imposed; LMPs concerning management, protection, and development of a potential site for viewing. Nevertheless, the preservation of scenic beauty would be effective, if the value could be considered in clearer environmental policies at the local, regional, and national levels. Concern for this has long been recognized in most land use planning activities. Besides that, support from the authoritieswould be essential to preserve natural beauty in many sensitive landscapes such as highland environment.

Among the task of a scenic researcher is to determine why certain landscapes are more beautiful than others. Importantly, the public can be the relevant observers, whose judgments provide information about the characteristics of the landscape that they prefer the most. Reviews indicate that the landscapes with natural settings are more preferred than landscapes with human intervention [7], [8], [9].The importance of natural characters of a landscape is clearly described in Arriaza, Canas-Oertego, Canas-Madueno, & Ruiz-Aviles [10]. In relation to natural environments, Jamilah[11] and Manohar, AhmadMakmom, Azizi, & Jamilah[12] agree that scenic beauty of these environments would implicate tourists' visitation.

Scenic landscape assessments that consider inventory and evaluation of visible attributes (e.g. natural elements such as mount, river, lake, and etc.) for the purposes of planning, management and design should be strongly considered in the making of many environmental policies.It is agreed that the methods of assessing scenic beauty are partly based on the description of the landscape attributes or characteristics [13]. The method requires a trained observer to systematically inspect and evaluate the landscape using the attributes identified together with any abstract design parameter thought relevant [14]. At the higher level which involves the national policy or act, the results can be used to defend the protection of scenic value through multiple - resource decision. The outcomes of the assessment can be management and planning tools that emphasize on conserving scenic areas or improving areas with low scenic beauty or tangible elements such as statements or scenic beauty maps [13].

3. Methods

Questionnaire and photographic surveys were the main instruments used to assess tourists' scenic preferences of Fraser's Hill. Chi square was used to determine the significant relationship between scenic attributes and tourists' preferences.

3.1. Exploratory Field Observation (EFO)

The objective of EFO was to identify the relevant ecological attributes that were probably associated with the scenic beauty. Types of highlands scenes were recorded using colored photographs. Photographs were randomly taken for documentation and preparation for survey instruments. The development of the survey instruments was fully guided by findings of the EFO.

3.2. Questionnaire Survey

The questionnaire survey had four Sections. Section 1 asked the respondents to state their demographic information. Sections 2, 3 and 4 asked them to state their scenic preferences using statements of agreement/disagreement that paired with 5 point likert scale.

3.3. Photographic Survey

The Photographic survey consisted of two sections. Section 1 asked the respondents to state their demographic background. Section 2 asked the respondents to rank 10 coloured photographs of the landscapes of Fraser's Hill. Rank 1 was the most preferred landscape scenery, while rank 10 was the least preferred landscape scenery. The potential respondents were approached and explained about the survey. If they declined to participate, the next potential respondent was approached. Three enumerators were assigned for the task and stationed randomly at the clock tower of Fraser's Hill. A total of 100 respondents had participated in the survey. Finding shows that 58% of the respondents were male, while the remains 42% were female. The difference in age is huge because the youngest one was 14 years old, while the oldest was 67 years old. The average age of the respondents was 34 years old. The local tourists formed the major group (85%) of the respondents.

4. Result and Analysis – Questionnaire Survey

Frequencies and percentages were used to analyze the scenic beauty preferences. A statistical test of 'Chi square' was used to determine the significant relationships i) between natural landscapes and tourism, ii) between scenic beauty and natural/man-made attributes and finally, iii) between scenic beauty and tourists' preferences. The followings describe the results and analyses of the questionnaire surveys.

4.1. Relationship between Natural Landscapes and Tourism

Table 1 summarises the relationship between natural landscapes and tourism. High number (79%) of tourists enjoyed visiting Fraser's Hill. Similarly, high number (76%) of them visited the hill because of its natural landscapes. Majority (79%) of the tourists liked staying in a resort with views of natural landscapes. So, the results suggest that the natural landscapes of Fraser's Hill have strongly influenced the tourists' visitation to Fraser's Hill.

4.2. Relationship between scenic beauty and natural/man-made attributes

Table 1 summarizes the relationship between scenic and natural/man-made attributes. Majority of the tourists had high agreement on the scenic beauty of forest (81%) and hilly landscapes (83%). Both landscapes of waterfall (58%) and lake (63%) received moderate scenic agreement. Interestingly, high percentage (79%) of the tourists agreed that the architectural heritage has high scenic value. So, the results suggest that landscapes with ecological attributes have significant relationship to scenic beauty and this includes the architectural heritage attribute as well.

4.3. Relationship between natural/man-made attributes and scenic preferences

Similarly, Table 1 summarises the relationship between natural/man-made attributes and scenic preferences. Majority of the tourists (83%) preferred viewing the landscape of forest. This follows by the scenery of hilly landform (79%). The third most preferred scenery was the view of architectural heritage (75%). But both golf course (47%) and commercial (47%) received low scenic preferences. The sceneries of water fall and lake received an average (63%) scenic preference. Planting vegetation along street also received an average (68%) scenic preference. Again, the attributes of natural and architectural heritage have significant scenic value.

Table 1 Summary of scenic beauty preferences of tourists of Fraser's Hill

| | STATEMENTS | AGREEMENT LEVEL | | | | | % Agree |
		SD	D	N	A	SA	
	i) Relationship between natural landscapes and tourism:						
Q8	I enjoy my visit to Fraser Hill.	0	1	20	61	18	79
Q9	I visit Fraser Hill because of its natural landscapes.	0	2	22	53	23	76
Q10	I like staying in a resort with views of natural landscapes.	0	1	20	41	38	79
	ii) Relationship between scenic beauty and natural/man-made						

	attributes:					
Q11	I feel that the forest landscapes are beautiful.	1	1	17	47	34	81
Q12	I feel that the hilly landforms are beautiful.	0	2	15	50	33	83
Q13	I feel that the heritage buildings are beautiful.	0	2	19	51	28	79
Q14	I feel that view of waterfall is beautiful.	0	4	38	41	17	58
Q15	I feel that the view of the lake is beautiful.	0	6	31	38	25	63
	iii) Relationship betweennatural/man-made attributesandscenic preferences:						
Q16	I prefer viewing trees planted along streets	0	2	30	48	20	68
Q17	I prefer viewing flowering plants planted along street	0	2	31	49	18	67
Q18	I prefer viewing flowering plants planted in pots along street	2	11	31	40	16	56
Q19	I prefer viewing hilly landform	0	5	16	51	28	79
Q20	I prefer viewing natural forest	0	0	17	47	36	83
Q21	I prefer viewing sceneries of resorts	5	4	21	40	30	70
Q22	I prefer viewing waterfall	0	4	33	31	32	63
Q23	I prefer viewing golf course	8	15	30	29	18	47
Q24	I prefer viewing commercial buildings	15	11	27	29	18	47
Q25	I prefer viewing heritage buildings	2	1	20	55	20	75

Note: Strongly Disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (A); Total respondents was 100 peoples

4.4. Significant difference between Scenic Attributes and Tourists Groups

The significant differences is shown in Table 2.The evidenced can be seen in the scenic attributes of water fall ($p=0.089$), lake ($p=0.057$), flowering plants planted on pot along the street ($p=0.084$), resorts ($p= 0.005$), golf course ($p=0.039$), commercial buildings ($p=0.004$) and heritage buildings ($p=0.066$). Probably, the differences in scenic preferencesbetween the local and foreign were resulted from cultural, social and environmental backgrounds. Overall, the strength of differences in scenic beauty preferences between the two groupsisconsidered low (refer to Table 3).

Table 2 Significant difference between scenic attributes and tourists' groups

Three Scenic Beauty Classes	Chi Square	df	Sig.
ii) Relationship between scenic beauty and natural/man-made attributes:			
I feel that view of waterfall of Fraser Hill is beautiful.	6.515	3	0.089*
I feel that the view of lake of Fraser Hill is beautiful.	7.527	3	0.057*
iii) Relationship between natural /man-made attributes and scenic preferences:			
I prefer viewing flowering plants planted in pots along street	8.226	4	0.084*
I prefer viewing sceneries of resorts	14.687	4	0.005*
I prefer viewing waterfall	6.640	3	0.084*
I prefer viewing golf course	10.101	4	0.039*
I prefer viewing commercial buildings	13.587	4	0.004*
I prefer viewing heritage buildings	8.806	4	0.066*

Note: * Significant difference

Table 3: Strength of relationship between 8 scenic beauty attributes and tourist groups

Scenic Beauty Variable	Measure of Association
i) Relationship between scenic beauty and ecological / man-made attributes:	
I feel that view of waterfall of Fraser Hill is beautiful.	0.247 (low association)
I feel that the view of lake of Fraser Hill is beautiful.	0.265 (low association)
ii) Relationship between natural/man-made and scenic preferences:	

I prefer viewing flowering plants planted in pots along street	0.276 (low association)
I prefer viewing sceneries of resorts	0.358 (moderate association)*
I prefer viewing waterfall	0.250 (low association)
I prefer viewing golf course	0.303 (moderate association)*
I prefer viewing commercial buildings	0.437 (moderate association)*
I prefer viewing heritage buildings	0.284(low association)

Note: * Significant strength
[1] Measured of association was based on Contingency Coefficient value (0-1).

5. Results and analysis – Photographic survey

The respondents were asked to rank the sceneries that they were most to least preferred. Based on 10 coloured photographs, they ranked the sceneries, in which rank 1 indicates the most preferred, while rank 10 was the least preferred scenery. Results show that View 9 (architectural heritage; 45:22.5%) is the most preferred landscape scenery, while View 7 (golf course; 7:3.5%) is the least preferred landscape scenery. In conclusion, the result suggests that the landscape sceneries with the architectural heritage attributes are highly preferred. So, this further concludes that the architectural heritage of Fraser's Hill is an important cultural asset that can implicate the tourism industry of Fraser's Hill.

6. Discussion and conclusion

In conclusion, the results suggest that the natural landscapes of forest and hilly landform of Fraser's Hill have significant scenic value and were highly preferred for. The study also suggests that the architectural heritage of the hill has equal significant to the natural landscapes.Thus, there is the need to protect the natural and cultural heritage of Fraser's Hill. Importantly, the views of water fall and lake were not much favourable.Perhaps, this is due to environmental pollution of both landscapes.The issues were evidenced during the EFO exercise. Thus, the insight suggests that the scenic beauty of Fraser's Hill can be an indicator to good ecology of nature-based environment.Further, these insights can be used to improve the ecology of the water features, since Fraser's Hill has potential to be significant nature-based tourism. Perhaps, the relevant authorities would have considered exercising proper LMPs in order to protect and sustain the unique and sensitive ecology of Fraser's Hill.

Acknowledgements

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