

Analysis of Recreation Satisfaction, Motivation, and Consumer Behavior at the 99-Peaks Forest Trail to Pursue Sustainable Forest Management in Taiwan

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Abstract

Sustainable national forest management is a day-to-day business as well as long term process in Taiwan. There are eight forest districts in Taiwan and they have common management problems to encounter huge demand in forest recreation from the surrounding communities. The Nantou Forest District has made more than 20 forest trails for general public in the past 10 years. Recreation satisfaction and the associated management problems on 14 trails were examined by a five-professor team in the past one year. The working method consists of counting trail visitors, interview with community leaders and trail visitors, and questionnaire were collected on a trail-by-trail basis. The SPSS has been implemented for statistical analysis and results were obtained to solve forest management problems encountered in all 14 trails, especially, the famous 99-Peaks Forest Trail. The t-test and ANOVA were used for verifying recreation satisfaction, motivation, and consumer behavior. The obtained results indicate recreation satisfaction is in the high level and management prescriptions have been implemented properly to make forest trails safe and attractive to the general public, in the meantime, sustainable forest management can be pursued as well.

Keywords: National Forest Trail, Recreation Satisfaction, Consumer Behavior, Forest Management

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Introduction

Since 2003, Forestry Bureau has made 14 national forest trails and there are over 60 regional trails in 4 areas in North, Middle, South and West and for general public to have a recreation activity with good reputation (Chyi-Rong Chiou, 2005; Hong-Zhong Lin, 2009). Most trails are adopted by local communities due to limited resources of Forestry Bureau, and the communities also afford the costs of management and maintenance because they usually have places to sell local agricultural products as part of the source of funding. Mei-Hui Chen (2003) indicated that improving the overall environment of communities, increasing life quality, developing communities' economical industry and creating a win-win between industry development and community development as well as forming partnerships with community residents in order to work together to promote biodiversity conservation, forest eco-tourism and the revitalization of the village economy for sustainable management of the communities. Manning (1985) pointed out that people participate in recreational activities is to meet a variety of tourism motivation and if we can classify visitors into groups abased on their motivation, which will be great reference for recreation area planning and management and more likely meet their needs of diverse experiences. For sustainability of communities and trails, it is very important to understand consumer behaviors of their willingness to revisit and recommend their recreation location and its influence factor.

Users' "consumer behavior" means their "willingness to revisit" and "willingness to recommend to other people," etc. intentions. Ross and Iso-Ahola (1991) indicated that motivation and satisfaction of recreation are to understand the core concept of users' "consumer behavior" and recreational motivation also has an impact on satisfaction. (Chong-Hong Wu,2007; Kuan-Chu Chen,Yu-Dong Lin, 2006; Yoon and Uysal, 2005).

Forest trails can help people get close to nature, to provide residents of recreation places, but also to protect natural ecosystems provide ecological research and environmental education (Hong-Zhong Lin, Chiung-Hui Chiu, 2006) In addition, the forest trails also help the local development of eco-tourism, reviving the local industry and to promote employment of residents (Kun-Ming Wu,2004 ; Hong-Zhong Lin, Chiung-Hui Chiu, 2006);Therefore, many communities in Taiwan aggressively develop community forest trails or natural trails (Hsueh-Cheng Liao,Hung-Chong Lin, Xinag-Li Lin,2008) . Management units should collect the satisfaction data of user experience in order to understand the pros and cons associated trails to improve service quality, improve recreation motivation and satisfaction as well as increase their willingness to revisit and promote community development.

Research Regions and Methods

1. Research Area

The study took 99-Peaks Forest Trail as the research objective (Figure1). It was planned by the Nantou Forest District Office and built along the ridge line, a full-length of 1930 meters with walking round trip time of about 100 minutes. After National Highway six opened had increased high availability of the trails. (Hong-Zhong Lin, Chiung-Hui Chiu, 2006) The trails were adopted by the local communities for maintenance and cleaning work. It not only provides the public people leisure and exercises as well as stress-lifting, but also increase the chance for people to experience nature and environmental education (Hong-Zhong Lin, Chiung-Hui Chiu, 2006).

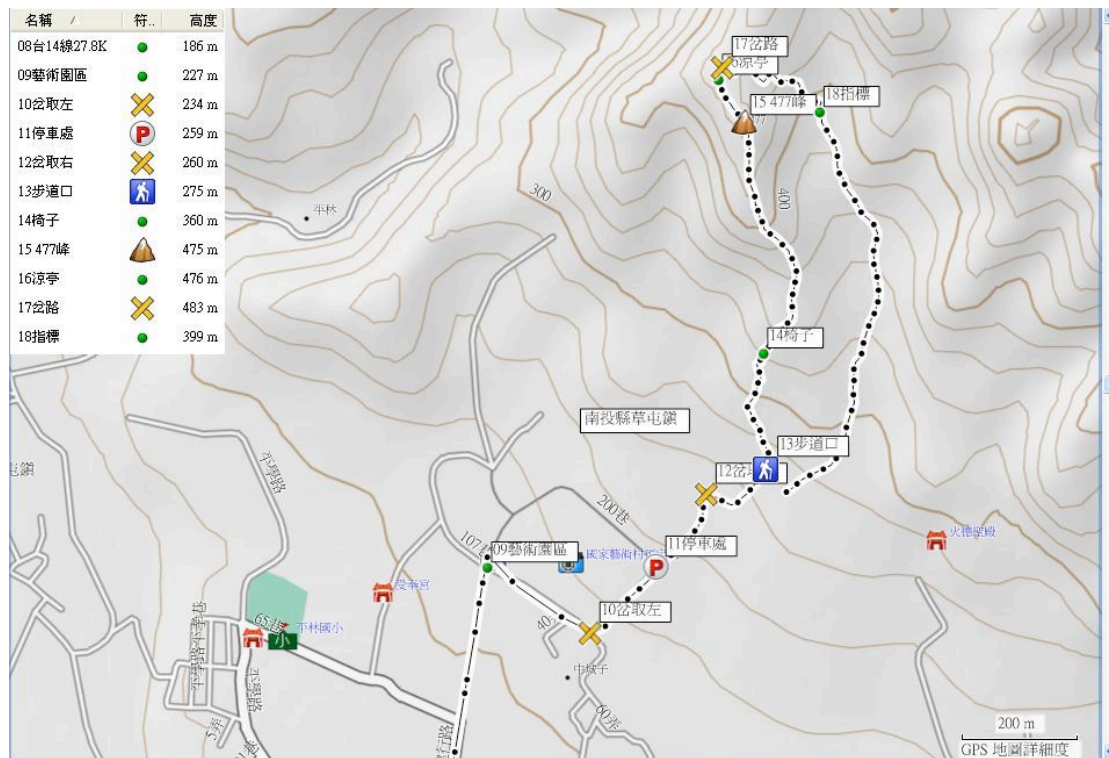


Figure 1. Location of 99-Peaks Forest Trail (from data on internet)

2. Research Methods

In this study, literature analysis and field tour were performed first to have a better understanding of regional forest trails. Later we had the questionnaire design and content of questionnaire is divided into (1) basic attributes of the respondents; (2) Interaction between respondents and the trails; (3) the motivations of the respondents for trails; (4) the satisfactions of the respondents for trails; and (5) the respondents' intentions to revisit and recommend for trails. Revisit Intention. In part

of satisfaction scale, five intervals of Likert scale was adopted in questionnaire with ranking in descending order, 5 represents very satisfied and 1 represents not very satisfied.

The study used accidental sampling method to collect data. Sampling survey was aimed to users of research area and conducted from November 2013 to May 2014, and there were 2,077 people within 32 days. Total 116 valid questionnaires were collected and analyzed with statistical analysis software SPSS.

3. Results Analysis and Conclusions

3.1 Descriptive statistics of trail visitors

3.1.1 Gender

Among 116 respondents of trail users with 57 females (49.1% to total) and, 59 males (50.9% to total), showing the number of males and females were very similar shown in Table 3.1. Hiking and walking in trails are general accepted and favorite activities for general public (Forestry Bureau, 2012) so that the user's gender distribution is also quite similar.

Table 3.1 User frequency by Gender

Gender	Headcounts	Percent (%)	Cumulative Percent (%)
Female	57	49.1	49.1
Male	59	50.9	100

3.1.2 Age

For age distribution of trails' users, the numbers under 30 years old were 18 people (15.5%); the numbers of age 30 to 40 years old were 16 people (13.8 %); the numbers of age 40 to 50 years old were 18 people (15.5%); the numbers of age 50 to 60 years old were 47 people (40.5%); the numbers of age above 60 years old were 17 people (14.7 percent), as shown in Table 3.2.

From Table 3.2, users of trails form 50 to 60 years old accounted for 40.5%, indicating the group owned most users, and the remaining age groups were almost the same. Users' age above 50 were 64 people (55.2%) and lower than age 30 were 18 people (15.5%).

Taiwan reached the standard aging society in 1993. With the approaching of aging society today, the average age of domestic hiking population are between 40 to 60 years old. The study also found that trail visitors also focus on the elderly.

Table 3.2 User frequency by Age

Age	Number of people	Percent (%)	Cumulative Percent (%)
30 years old	18	15.5	15.5
30-40 years old	16	13.8	29.3
40-50 years old	18	15.5	44.8
50-60 years old	47	40.5	85.3
60 years old	17	14.7	100

3.1.3 Residence

User frequency by residence was shown in Table 3.3. Outside tourists accounted for 68.1% with 79 people, followed by neighboring communities at 19% with 22 people as well as local residents accounted for 12.9% with 15 people.

Table 3.3 User frequency by Residence

Living	Number of people	Percent (%)	Cumulative Percent (%)
Local residents	15	12.9	12.9
Neighboring residents	22	19.0	31.9
Outside tourists	79	68.1	100

3.1.4 The average monthly number of times with the use of this trail

Monthly frequency of trails usage less than once accounted for 70.7% with 82 people. 1-2 times accounted for 22.4% with 26 people; 3-4 times accounted for 4.3% with 5 people; 5-8 times accounted for 1.7 % with 2 people; more than 9 times accounted for 0.9% with 1 person, more than 2 times accounted for 6.9% % as detailed in Table 3.4. Use trails on holidays accounted for 76.7% ranked highest; non-holidays accounted for 4.3%, not certain accounted for 19% as detailed in Table 3.5.

Table3.4 Monthly Average trails usage

Use times	Number of people	Percent (%)	Cumulative Percent (%)
Less than 1	82	70.7	70.7
1-2 times	26	22.4	93.1
3-4 times	5	4.3	97.4
5-8 times	2	1.7	99.1
More than 9times	1	0.9	100

Table3.5. Usage number on Holidays

Day use trails	Number of people	Percent (%)	Cumulative Percent (%)
Holidays (Saturday and Sunday included national holidays)	89	76.7	76.7
Non-holidays	5	4.3	81
Not Certain	22	19.0	100

3.2 Recreation motivation, satisfaction, and consumer behavior

3.2.1 Recreation motivation on visiting the forest trail

Use trails motivation to "word of mouth" accounted for 52.6% of the largest, followed by "Fun with friends "of 38.8% and "recreation" (34.5 percent), "sports " (29.3%), " family to experience outdoor activities," accounting 8.6%, "enjoy solitude," 4.3%, "other" (1.7%), as detailed in Table 3.6.

Table 3.6 Motivation on visiting

Year Age	Word of mouth	Fun With friends	Recreation	Sports	Family to experience outdoor activity	Enjoy solitude	Others
30 years old	6	6	8	5	1	0	1
30-40 years old	7	5	8	8	0	0	0
40-50 years old	11	5	5	5	3	2	0
50-60years old	25	22	13	13	5	1	1
60 years old	12	7	6	3	1	2	0
Total	61	45	40	34	10	5	2
Percent (%)	52.6	38.8	34.5	29.3	8.6	4.3	1.7

3.2.2 Satisfaction on visiting the forest trail

Table 3.7 explained overall satisfaction of 99-Peaks Forest Trail by trail visitors. Dissatisfied and very dissatisfied accounted for 2.6%, and very satisfied, satisfied and no idea accounted for 97.4%. 2.6% of total is not satisfied with safety of trails.

1. Resource Satisfaction: Satisfaction of resources along the trail divided into biological resources, the non-biological resources and cultural landscape resources. Very dissatisfied with biological resources and non-living resources accounted for 0.9% and cultural landscape resources were dissatisfied very and dissatisfied with 3.5% (detailed in Table 3.7).

2. Trail design: dissatisfied and very dissatisfied with 3 items of comfort space to trail, trail length (walking the whole time) and walks slope were 1.7%, 4.3%, 3.5% respectively (as detailed in Table 3.7), 99 Peak Forest trail status for people to use trails or walk the entire trail length in terms of time that very satisfied, satisfied and no idea accounted for 95.7%.

3. Trail related facilities: the trail-related facilities satisfaction analysis was consisted of 4 items-explain the facilities, gazebo and chairs, signs and explanatory signs, pavement and railings. Dissatisfied and very dissatisfied on above four items accounted for 4.3 % to 6.9%, (detailed in Table 3.7).

Dissatisfied and very dissatisfied with linking road convenience were 10.4%. In fact many people came to trails via linking road for its convenience. Dissatisfied and very dissatisfied with parking lot were 8.7%, but in front of trail entrance, 99 Peak

Ecological Park adjoining road side and parking lot of art can be stopped 30 cars which can resolve parking problems.

Table 3.7 Satisfaction on visiting the 99 Forest Trail (%)

Project	Very satisfied	satisfied	No idea	Not satisfied with(A)	Very dissatisfied(B)	Dissatisfied and very dissatisfied (A + B)
Overall satisfaction	19.0	57.8	20.7	1.7	0.9	2.6
Trail security	26.7	60.3	10.3	2.6	0	2.6
Biological Resources	22.4	58.6	18.1	0	0.9	0.9
Non-living resources	35.3	50.0	13.8	0	0.9	0.9
Cultural landscape resources	18.1	45.7	32.8	2.6	0.9	3.5
Comfort of trail	31.0	47.4	19.8	1.7	0	1.7
Trail length (Total time taken)	17.2	60.3	18.1	3.4	0.9	4.3
Gradient of trail	17.2	56.9	22.4	2.6	0.9	3.5
Instructions	13.8	42.2	39.7	3.4	0.9	4.3
Pavilion seat	21.6	51.7	20.7	4.3	1.7	6.0
Signs and interpretative signs	17.2	50.0	26.7	5.2	0.9	6.1
Pavement and railings	18.1	55.2	19.8	6.0	0.9	6.9
Parking lot	12.9	51.7	26.7	7.8	0.9	8.7
Convenience of traffic	19.0	46.6	24.1	9.5	0.9	10.4
Gain of creature knowledge	13.8	47.4	30.2	7.8	0.9	8.7
Geography and Geology	14.7	57.8	23.3	4.3	0	4.3
Biological evolution	16.4	42.2	34.5	6.0	0.9	6.9
Ecosystem composition	14.7	45.7	32.8	6.0	0.9	6.9

As shown in Table 3.8 in satisfaction of the statistical results showed that the use non-living resources ranking first at 4.19 of average value, followed by trail security, an average of 4.11; the trail space comfort level of average value at 4.08 ranked third. This showed 99 Peak Forest Trail is with beautiful scenery, fresh air and safe

for people to hike. The lowest average item was commentary facility, an average of 3.65 indicated the satisfaction is still inclined to be satisfied.

Table 3.8 Satisfaction Content List on visiting the 99 Forest Trail

Satisfaction contents	Average	Standard deviation
Non-living resources satisfaction	4.19	.733
Trail security	4.11	.682
Comfort of trail	4.08	.759
Satisfaction biological resources	4.02	.698
Overall satisfaction	3.92	.736
Length and time taken	3.90	.750
Gradient of trail	3.87	.752
Pavilion seat	3.87	.860
Pavement and railings	3.84	.823
Geography and Geology	3.83	.726
Signs and interpretative signs	3.78	.824
Cultural landscape resources	3.78	.803
Convenience of traffic	3.73	.908
Parking lot	3.68	.830
Ecosystem composition	3.67	.832
Biological evolution	3.67	.852
Gain of creature knowledge	3.66	.845
Instructions	3.65	.794

Notes: (1) Very satisfied with 5 points; (2) satisfied with 4 points; (3) Normal with 3 points; (4) dissatisfied with 2 points (5) Very dissatisfied with 1 points

3.2.3 Consumer Behavior on Visiting the Forest Trail

The study acquired that the information sources of forest trail were mainly introduced by relatives or friends, which occupies for 66.4%; 13.8% for internet, 12.9% for local residents, 11.2 for journalism, 8.6% for traveling books, 8.6% for found by own, and 5.2% for programs on television, which are listed in Table 3.9.

Table 3.9. The analysis of information sources of forest trail

Gender	Relatives	Internet	Local residents	Journalism	Traveling books	Found by own	Programs on TV
Female	38	6	4	4	2	4	1
Male	39	10	11	9	8	6	5
Total	77	16	15	13	10	10	6
Percentages	66.4	13.8	12.9	11.2	8.6	8.6	5.2

The visitors of forest trail willing to recommend the trail to others is occupied for 96.6%, while ones who would not are 3.4%, which are listed in Table 3.11. The visitors would use the trail again is occupied for 94.8%, and ones who would not are 5.2%, which are listed in Table 3.12.

Table 3.11 The statistics of persons willing to recommend the trail to others

Recommend to others	Persons	Percentage (%)	Accumulated percentage (%)
Yes	112	96.6	96.6
No	4	3.4	100.0
Total	116	100.0	

Table 3.12 The statistics of persons would reuse the trail

Use the trail again	Persons	Percentage (%)	Accumulated percentage (%)
Yes	110	94.8	94.8
No	6	5.2	100.0
Total	116	100.0	

3.3 The effect of background variables to satisfaction by t-test

3.3.1 Gender

The visitor satisfaction of different genders ($p > 0.05$) revealed no significant difference after analyzing, which indicated the visitor satisfaction of 99 Peaks Forest Trail has no difference between genders. The statistics are listed in Table 3.13.

Table 3.13. The analysis of visitor satisfaction of different genders to forest trail

Sources of variable	Gender	Subjects	Means	Standard Deviation	t value	p
Creature resources satisfaction	Female	57	4.05	.742	.535	.593
	Male	59	3.98	.656		
Non-living resources satisfaction	Female	57	4.16	.774	.814	.649
	Male	59	4.22	.696		
Cultural landscape resources	Female	57	3.77	.846	-.052	.959
	Male	59	3.78	.767		
Trail security	Female	57	4.05	.666	-.922	.359
	Male	59	4.17	.699		
Comfort of trail	Female	57	4.16	.751	1.121	.265
	Male	59	4.00	.766		
Instructions	Female	57	3.67	.831	.267	.790
	Male	59	3.63	.763		
Distance and time taken	Female	57	3.93	.821	.468	.641
	Male	59	3.86	.681		
Gradient of trail	Female	57	3.84	.841	-.401	.689
	Male	59	3.90	.662		
Pavilion seat	Female	57	3.82	.909	-.566	.572
	Male	59	3.92	.816		
Signs and interpretative signs	Female	57	3.88	.847	1.305	.195
	Male	59	3.68	.797		
Parking lot	Female	57	3.74	.813	.710	.479
	Male	59	3.63	.849		
Pavement and railings	Female	57	3.84	.841	.076	.940
	Male	59	3.83	.813		
Convenience of traffic	Female	57	3.81	.811	.868	.387
	Male	59	3.66	.993		
Gain of creature knowledge	Female	57	3.65	.896	-.075	.940
	Male	59	3.66	.801		
Geography and Geology	Female	57	3.81	.718	-.299	.766
	Male	59	3.85	.738		
Biological evolution	Female	57	3.65	.855	-.288	.774
	Male	59	3.69	.856		
Ecosystem composition	Female	57	3.72	.840	.595	.553
	Male	59	3.63	.828		
Overall satisfaction	Female	57	3.95	.742	.358	.721
	Male	59	3.90	.736		

Note: * = $p < 0.05$

3.3.2 Age

Table 3.14 showed the visitors of 99 Peaks Forest Trail in different ages have significant differences on satisfaction of Gain of creature knowledge ($F=3.497$, $p<0.05$); Scheffe post hoc revealed the satisfaction of Creature knowledge provision of visitors under 30 years old is obviously higher than visitors in 30-40 and 50-60 years old.

Table 3.14. The analysis of visitor satisfaction of different ages to forest trail

Sources of variable		Sum of square	Freedom	Mean sum of square	F	Scheffe method
Creature resources satisfaction	Between	1.101	4	.275	.557	
	Within	54.864	111	.494		
	Sum	55.966	115			
Non-living resources satisfaction	Between	.967	4	.242	.441	
	Within	60.861	111	.548		
	Sum	61.828	115			
Cultural landscape resources	Between	2.319	4	.580	.896	
	Within	71.853	111	.647		
	Sum	74.172	115			
Trail security	Between	.818	4	.205	.431	
	Within	52.725	111	.475		
	Sum	53.543	115			
Comfort of trail	Between	1.152	4	.288	.491	
	Within	65.149	111	.587		
	Sum	66.302	115			
Instructions	Between	1.945	4	.486	.765	
	Within	70.564	111	.636		
	Sum	72.509	115			
Distance and time taken	Between	1.353	4	.338	.592	
	Within	63.406	111	.571		
	Sum	64.759	115			
Gradient of trail	Between	3.034	4	.759	1.358	
	Within	62.026	111	.559		
	Sum	65.060	115			
Pavilion seat	Between	5.146	4	1.286	1.787	
	Within	79.914	111	.720		
	Sum	85.060	115			
Signs and interpretative signs	Between	1.019	4	.255	.366	
	Within	77.154	111	.695		
	Sum	78.172	115			
Parking lot	Between	1.388	4	.347	.495	
	Within	77.810	111	.701		
	Sum	79.198	115			
Pavement and	Between	.638	4	.160		

railings	Within	77.250	111	.696	.229	
	Sum	77.888	115			
Convenience of traffic	Between	2.552	4	.638		
	Within	92.163	111	.830	.768	
	Sum	94.716	115			
Gain of creature knowledge	Between	9.199	4	2.300		1>2
	Within	73.008	111	.658	3.497*	1>4
	Sum	82.207	115			
Geography and Geology	Between	2.977	4	.744		
	Within	57.575	111	.519	1.435	
	Sum	60.552	115			
Biological evolution	Between	3.721	4	.930		
	Within	79.831	111	.719	1.294	
	Sum	83.552	115			
Ecosystem composition	Between	2.603	4	.651		
	Within	76.949	111	.693	.939	
	Sum	79.552	115			
Overall satisfaction	Between	3.275	4	.819		
	Within	59.027	111	.532	1.539	
	Sum	62.302	115			

Note: * = $p < .05$. The ages were divided into 5 levels (1) Under 30, (2)30-40, (3)40-50, (4)50-60 (5) above 60

3.3.3 Residence

Table 3.15 showed no significant differences on the satisfaction of visitors lived in different residences ($p>0.05$) after analyzing, which indicated the visitor satisfaction of 99 Peaks Forest Trail has no difference between residences.

Table 3.15. The analysis of visitor satisfaction of different residences to forest trail

Sources of variable		Sum of square	Freedom	Mean sum of square	F	Significance
Creature resources satisfaction	Between	.387	2	.194	.394	.675
	Within	55.578	113	.492		
	Sum	55.966	115			
Non-living resources satisfaction	Between	1.649	2	.824	1.548	.217
	Within	60.179	113	.533		
	Sum	61.828	115			
Cultural landscape resources	Between	.775	2	.387	.596	.553
	Within	73.398	113	.650		
	Sum	74.172	115			
Trail security	Between	1.484	2	.742	1.611	.204
	Within	52.059	113	.461		
	Sum	53.543	115			
Comfort of trail	Between	2.655	2	1.328	2.357	.099
	Within	63.646	113	.563		
	Sum	66.302	115			
Instructions	Between	1.087	2	.544	.860	.426
	Within	71.421	113	.632		
	Sum	72.509	115			
Distance and time taken	Between	.694	2	.347	.612	.544
	Within	64.065	113	.567		
	Sum	64.759	115			
Gradient of trail	Between	2.275	2	1.138	2.048	.134
	Within	62.785	113	.556		
	Sum	65.060	115			
Pavilion seat	Between	.195	2	.098	.130	.878
	Within	84.865	113	.751		
	Sum	85.060	115			
Signs and interpretative signs	Between	.069	2	.035	.050	.951
	Within	78.103	113	.691		
	Sum	78.172	115			
Parking lot	Between	.994	2	.497	.718	.490
	Within	78.205	113	.692		
	Sum	79.198	115			
Pavement and railings	Between	2.582	2	1.291	1.937	.149
	Within	75.306	113	.666		
	Sum	77.888	115			

Convenience of traffic	Between	2.240	2	1.120		
	Within	92.476	113	.818	1.368	.259
	Sum	94.716	115			
Gain of creature knowledge	Between	.427	2	.213		
	Within	81.780	113	.724	.295	.745
	Sum	82.207	115			
Geography and Geology	Between	1.129	2	.564		
	Within	59.423	113	.526	1.073	.345
	Sum	60.552	115			
Biological evolution	Between	.774	2	.387		
	Within	82.778	113	.733	.528	.591
	Sum	83.552	115			
Ecosystem composition	Between	.866	2	.433		
	Within	78.686	113	.696	.622	.539
	Sum	79.552	115			
Overall satisfaction	Between	1.015	2	.508		
	Within	61.287	113	.542	.936	.395
	Sum	62.302	115			

Note: * = $p < 0.05$. The averages of monthly visiting days are divided into 5 levels, (1) below 1 (2) 1-2 (3) 3-4 (4) 5-8 (5) above 9.

3.3.4 Average number of monthly visiting days by trail visitors

Table 3.16 showed no significant differences on the satisfaction of visitors with distinct average number of monthly visiting days after analyzing, which indicated the visitor satisfaction of 99 Peaks Forest Trail has no difference between number of monthly visits.

Table 3.16. The analysis of visitor satisfaction of different number of monthly visits variable

Sources of variable		Sum of square	Freedom	Mean sum of square	F	Significance
Creature resources satisfaction	Between	.387	2	.194	.394	.675
	Within	55.578	113	.492		
	Sum	55.966	115			
Non-living resources satisfaction	Between	1.649	2	.824	1.548	.217
	Within	60.179	113	.533		
	Sum	61.828	115			
Cultural landscape resources	Between	.775	2	.387	.596	.553
	Within	73.398	113	.650		
	Sum	74.172	115			
Trail security	Between	1.484	2	.742	1.611	.204
	Within	52.059	113	.461		
	Sum	53.543	115			
Comfort of trail	Between	2.655	2	1.328	2.357	.099
	Within	63.646	113	.563		
	Sum	66.302	115			
Instructions	Between	1.087	2	.544	.860	.426
	Within	71.421	113	.632		
	Sum	72.509	115			
Distance and time taken	Between	.694	2	.347	.612	.544
	Within	64.065	113	.567		
	Sum	64.759	115			
Gradient of trail	Between	2.275	2	1.138	2.048	.134
	Within	62.785	113	.556		
	Sum	65.060	115			
Pavilion seat	Between	.195	2	.098	.130	.878
	Within	84.865	113	.751		
	Sum	85.060	115			
Signs and interpretative signs	Between	.069	2	.035	.050	.951
	Within	78.103	113	.691		
	Sum	78.172	115			
Parking lot	Between	.994	2	.497	.718	.490
	Within	78.205	113	.692		
	Sum	79.198	115			
Pavement and railings	Between	2.582	2	1.291	1.937	.149
	Within	75.306	113	.666		

	Sum	77.888	115			
Convenience of traffic	Between	2.240	2	1.120		
	Within	92.476	113	.818	1.368	.259
	Sum	94.716	115			
Gain of creature knowledge	Between	.427	2	.213		
	Within	81.780	113	.724	.295	.745
	Sum	82.207	115			
Geography and Geology	Between	1.129	2	.564		
	Within	59.423	113	.526	1.073	.345
	Sum	60.552	115			
Biological evolution	Between	.774	2	.387		
	Within	82.778	113	.733	.528	.591
	Sum	83.552	115			
Ecosystem composition	Between	.866	2	.433		
	Within	78.686	113	.696	.622	.539
	Sum	79.552	115			
Overall satisfaction	Between	1.015	2	.508		
	Within	61.287	113	.542	.936	.395
	Sum	62.302	115			

4.1 Attributes of trail visitors

By recording the visitors visited 99 Peak Forest Trail from November to May in the next year, the gender distribution was even and the visitors were mainly consisted of non-local middle and old age; the average visiting day was below 1 per month, majorly visited on holiday. The main motivation was to exercise and view the wild scenes.

4.2 Recreation motivation of trail visitors

52.6% of the visitors were visiting the trail for “Reputation” which was accounted to the most, followed by “Having fun with friends”, “Recreation” and “Exercising”. In addition, the pursuit of physical, psychological and social needs was also the motivation of visitors to achieve self-fulfillment.

4.3 Satisfaction of trail visitors

In terms of satisfaction, Non-creature resources stood as the first, followed by Trail safety and Comfort of trail, which were between satisfied and very satisfied. The geographical, geological scene, security and comfort of the trail were approved by most of the visitors. The average of general satisfaction was 3.92, while 2.6% of the visitors imputed dissatisfied and very dissatisfied. The items received low satisfaction

were Parking lot, Gain of creature knowledge and Instructions. These items may be a future reference for relative authorities to improve in the future.

4.4 Consumer behavior of trail visitors

In terms of the source of trail information, introduced by relatives or friends was the main methods, followed by Internet; the transportation was mainly by sightseeing bus and midsize vehicles; 96.6% of visitors would recommend the trail to others and 94.8% would visit again.

4.5 Satisfaction of trail visitors from different backgrounds

After adopting the methods of independent-sample t test and one way ANOVA, the results showed no significant difference on satisfaction between genders, residences and average numbers of monthly visiting days. The satisfaction of Gains of creature knowledge had a significant difference in ages. The Scheffe post hoc indicated the satisfaction under 30 years old was higher than 30-40 and 50-60.

5. Reference

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