

CHAPTER 4

RESULTS AND DISCUSSION

The results of the study relating to **'An Analysis of Ecotourism experience and Future Behavioural Intention with Specific Reference to Periyar Tiger Reserve'** are discussed under the following heads

- 4.1 Socio-economic profile of the respondents;
- 4.2 Motivations to visit ecotourism destination;
- 4.3 Sources of information for respondents about ecotourism destination;
- 4.4 Analysis of seasonality in ecotourism;
- 4.5 Analysis of ecotourism experience ;
 - 4.5.1 Components of Ecotourism experience in peak and lean season;
 - 4.5.2 Identification of dimensions of ecotourism experience: Exploratory factor analysis;
 - 4.5.3 Confirmation of dimensions of Ecotourism experience - Confirmatory Factor Analysis;
 - 4.5.4 Measurement model for first order constructs – Tangible, Intangible, Psychological and Demographic attributes;
 - 4.5.4.1 Measurement model for tangible attributes dimension;
 - 4.5.4.2 Measurement model for intangible attributes dimension;
 - 4.5.4.3 Measurement model for Psychological dimensions;
 - 4.5.4.4 Measurement model for demographic dimensions;
 - 4.5.5 Confirmatory Model for ecotourism experience construct;
 - 4.5.6 Validation of ecotourism experience construct;
- 4.6 Analysis of ecotourist satisfaction;
 - 4.6.1 Measurement model for ecotourist satisfaction;

- 4.7 Analysis of future behavioral Intention;
 - 4.7.1 Measurement model for future behaviorial intention;
- 4.8 Analysis of relationship between ecotourism experience, ecotourist satisfaction and future behavioral intention;
 - 4.8.1 Individual model for ecotourism experience construct;
 - 4.8.2 Validation of individual model for ecotourism construct;
 - 4.8.3 Integrated model;
 - 4.8.4 Validation of integrated model;
- 4.9 Constraints faced by tourists visitors - Periyar Tiger Reserve;
- 4.10 Suggestions given by the respondents to improve ecotourism at Periyar Tiger Reserve.

4.1 Socio- economic profile of the respondents:

With an intention of developing a proper perspective analysis, the current study tried to analyse socio economic profile of the respondents. This helps in understanding the influence of these factors on their interests and activities.

Table 14 represents socio - economic profile of the selected respondents

Table 14**Socio-economic profile of the selected respondents**

Items	Classification	Domestic Tourists	Foreign tourists	Total
Age (in years)	Below 30	63 (13.20)	3 (6.50)	66 (12.62)
	30-40	187 (39.20)	25 (54.34)	212 (40.53)
	40-50	123 (25.78)	12 (26.08)	135 (25.81)
	50-60	101 (21.17)	4 (8.69)	105 (20.07)
	Above 60	3 (0.63)	2 (4.34)	5 (0.96)
Sex	Males	379 (79.45)	30 (65.21)	409 (78.20)
	Females	98 (20.55)	16 (34.78)	114 (21.79)
Education	Secondary	Nil (0.00)	Nil (0.00)	Nil (0.00)
	Higher secondary	3 (.63.00)	Nil (0.00)	3 (0.57)
	Graduation	323 (67.71)	34 (73.91)	357 (68.26)
	Post graduation and above	151 (31.65)	12 (26.08)	163 (31.16)
Employment	Unemployed	54 (11.32)	2 (4.34)	56 (10.70)
	Employed	423 (88.67)	44 (95.65)	467 (89.29)
Annual Income (in rupees)	Below 5 lakhs	73 (15.30)	Nil	73 (13.95)
	5-10 lakhs	367 (76.93)	1(2.17)	368 (70.37)
	Above 10 lakhs	37 (7.75)	45(97.82)	82(15.68)
Marital status	Married	355 (74.42)	42 (91.30)	397 (75.90)
	Unmarried	122 (25.57)	4 (8.69)	126 (24.09)
Total		477	46	523

Source: Field survey 2014-15

Figures in parentheses indicate percentage to total

Majority of the domestic tourists respondents, (39.20 percent), foreign tourist respondents (54.34 percent) and total respondents (40.53 percent) belonged to the age group of 30 to 40 years. This finding is in line with that of Ballantine and Eagles (1994) and Diamantis (1999) that, soft ecotourists are below 45 years of age

Figure 3A, 3B and 3C represents the age composition of domestic tourists, foreign tourists and total tourists respectively.

Figure 3A

Age composition of Domestic Tourists (in percent)

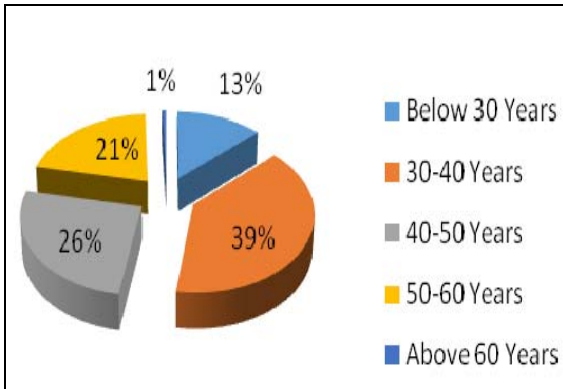


Figure 3B

Age composition of Foreign Tourists (in percent)

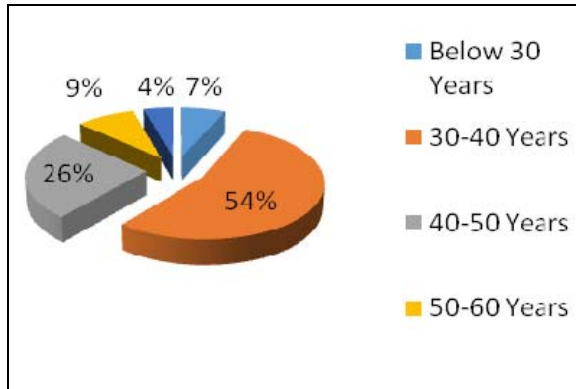
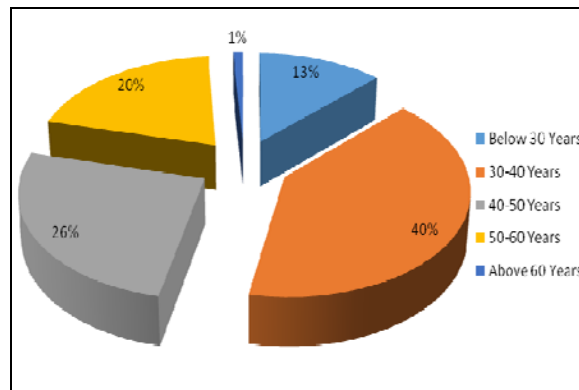


Figure 3C

Age composition of Total tourists (in percent)



Majority of domestic tourist respondents (79.45 percent) and foreign tourist respondents (65.21 percent) were males. As a whole 78 percent of the total respondents were males. This finding does not corroborate with Wight (2001), Weaver and Lawton (2001) who have concluded that ecotourists are more likely to be females.

With regard to educational level, of total domestic tourists, (67.71 percent) have completed graduation while the corresponding percentage of foreign tourists respondents was 73.91 percent. Of the total respondents, 68.26 percent have completed graduation. This finding is in tune with the findings of (Eagles and Cascagnette, 1995) that the majority of ecotourists had collegiate education.

Figure 4A, 4B and 4C represent the educational composition of the respondents.

Figure 4A

Educational composition of Domestic Tourists (in percent)

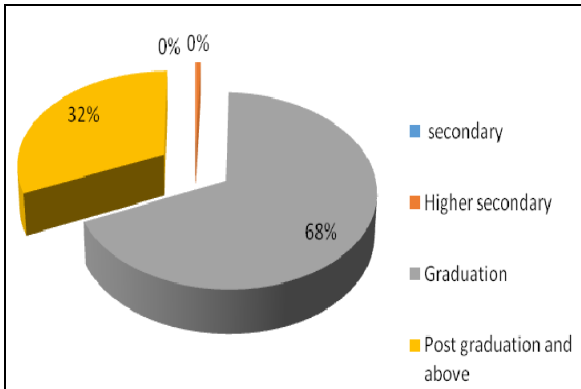


Figure 4B

Educational composition of Foreign Tourists (in percent)

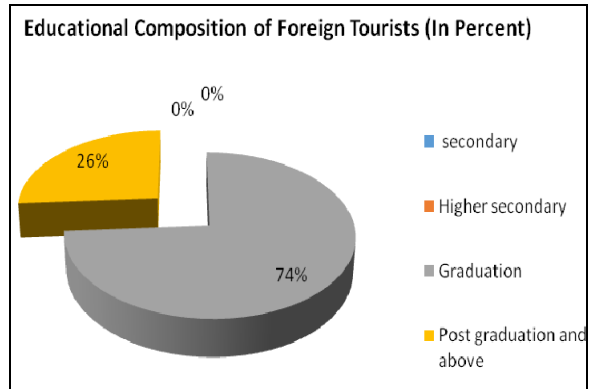
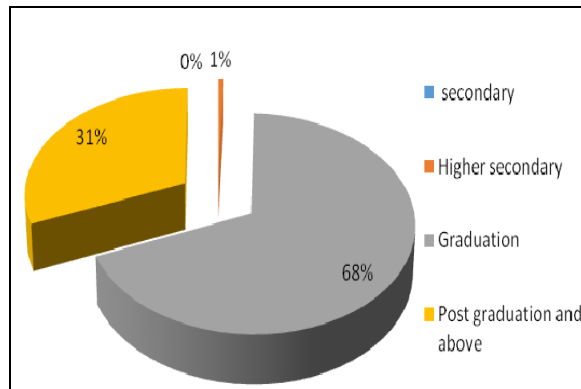


Figure 4C

Educational composition of Total tourists (in percent)



Of the domestic tourists 88.68 percent were employed and of foreign tourist respondents 95.65 percent were employed. As a whole, 89.29 percent of the total respondents were employed.

Majority of domestic tourist respondents (76.93 percent) were earning the income of Rs. 5 to 10 lakhs per annum. Majority of foreign tourist respondents, 97.82 percent were belonging to income category of above Rs. 10 lakhs per annum. However, 70.36 percent of total respondents were earning the income of Rs. 5 to 10 lakhs per annum. This finding corroborates with the finding of (Wight, 2001), that ecotourists have higher income.

Figure 5A, 5B, 5C represents the income composition of domestic tourists, foreign tourists and total tourists.

Figure 5A

Income composition of Domestic Tourists (in percent)

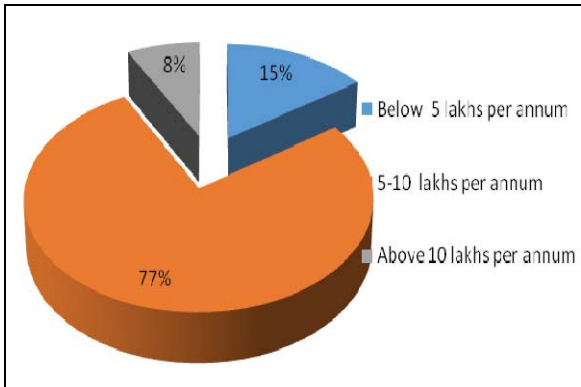


Figure 5B

Income composition of Foreign Tourists (in percent)

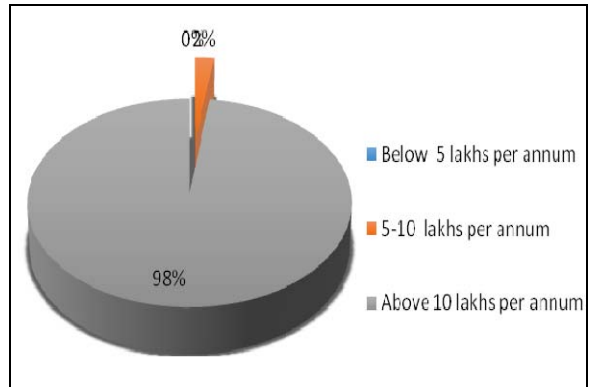
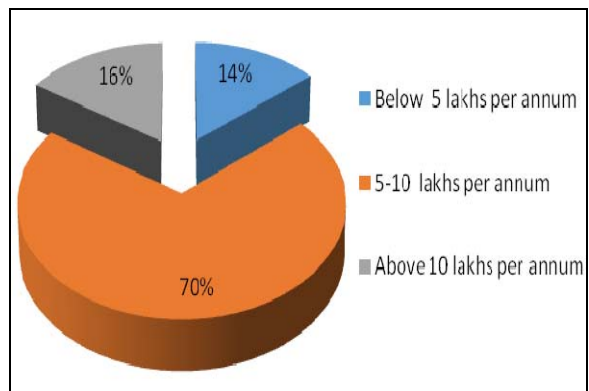


Figure 5C

Income composition of total Tourists (in percent)



Of the total domestic tourist respondents 74.42 percent were married while 91.30 percent of foreign tourist respondents were married and 75.90 percent of total respondents were married. As such, enjoying family togetherness is the important reason for visiting ecotourism destination. This coincides with the study of Holzer et al. (1998), that majority of ecotourists were married.

4.2 Motivations to visit ecotourism destination:

Ecotourism is nature-based tourism and tourists prefer visiting these destinations either alone or with family and friends. Tourists visit ecotourism destinations like Periyar Tiger Reserve for many reasons. Some of them visit the destination for enjoying exclusively ecotourism activities like jungle walk, nature walk, for non ecotourism activities like elephant safari, boating, for research, enjoyment with family members, change from daily routine, visit to uncrowded destinations etc. The current study attempted to evaluate the motivations of ecotourists visiting this destination as this could have a vital role to play in determining the satisfaction level.

Table 15 represents the motivational factors for visiting Periyar Tiger Reserve.

Table 15

Motivational factors for visiting Periyar Tiger Reserve

Motivation	Domestic tourists	Foreign tourists	Total tourists
Enjoying ecotourism activities exclusively	171(35.84)	21(45.65)	192(36.71)
Research	4(0.85)	Nil(0)	4 (0.76)
Relaxation	90(18.86)	8(17.39)	98 (18.73)
Change from daily routine	40(8.38)	4(8.69)	44 (8.41)
Visit to uncrowded destinations	55(11.53)	7(15.21)	62 (11.85)
Enjoyment with family	117(24.52)	6(13.04)	123 (23.51)

Source: Field survey 2014-15

Figures in parentheses indicate percentage to total

Majority of domestic tourists (35.84 percent) and foreign tourists (45.65 percent) have visited Periyar Tiger Reserve for enjoying exclusively ecotourism activities. The other important motivations include enjoyment with family and relaxation. This corroborates with the findings of (Eagles, 1992; Eagles and Cascagnette, 1995, Wight, 1996) that visiting uncrowded destinations, change from daily routine are the main motivation for visiting Periyar Tiger Reserve.

Figure 6A, 6B, 6C represents the motivations for visiting Periyar Tiger Reserve by domestic, foreign and total tourists respectively.

Figure 6A

**Motivations for visiting Periyar Tiger Reserve -Domestic tourists
(in percent)**

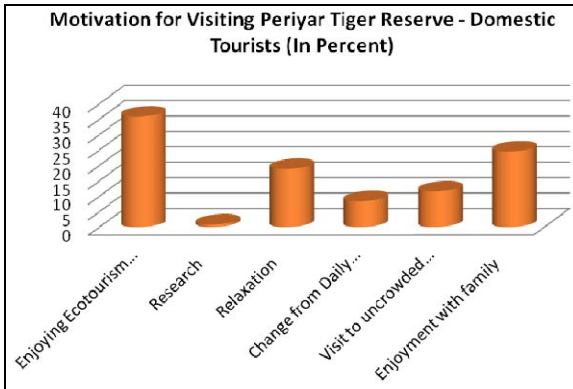


Fig 6B

**Motivations for visiting Periyar Tiger Reserve -Foreign Tourists
(in percent)**

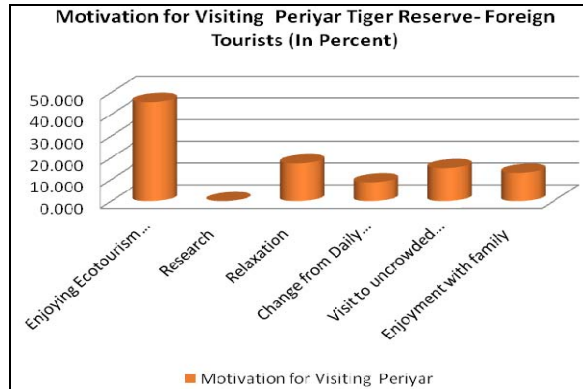
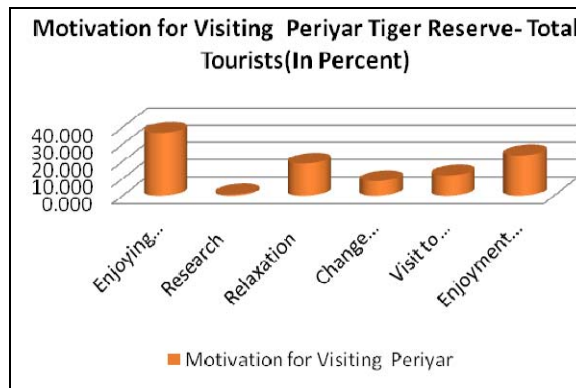


Figure 6C

Motivations for visiting Periyar Tiger Reserve-Total tourists(in percent)



4.3 Sources of information for the respondents about ecotourism destination

The current study attempted to examine the sources of information for the respondents about Periyar Tiger Reserve.

Table 16 represents the sources of information for the respondents about Periyar Tiger Reserve.

Table 16

Sources of information for the respondents about Periyar Tiger Reserve

Sources	Domestic tourists	Foreign tourists	Total tourists
Word of Mouth (Friends and relatives)	165 (34.59)	9 (19.56)	174 (33.27)
Internet	279 (58.49)	24 (52.17)	303 (57.93)
Magazines and Books	13 (2.72)	6 (13.04)	19 (3.63)
Trade fair	8 (1.67)	3 (6.52)	11 (2.10)
Publicity campaign	5 (1.04)	2 (4.34)	7 (1.33)
Brochures (others)	7 (1.46)	2 (4.34)	9 (1.72)
Total	477	46	523

Source: Field survey 2014-15

Figures in parentheses indicate percentage to total

Internet has been the major source of information on Periyar as 58.49 percent of the domestic tourists' respondents and 52.17 percent of foreign tourist respondents have relied on internet. This is similar to the findings of Lai and Shafer (2005) that travel blogs are considered to be the major source. Word of mouth publicity had also played a prominent role as 33.27 percent of them have been influenced by that, which is in line with loyalty studies in tourism literature. (Gallarza and Saura (2006) and Valazques et al. (2011). Few respondents have sought information from trade fairs(2.10 percent), brochures (1.72 percent) and publicity campaigns of the destination.(1.33 percent).

Fig 7A, 7B, 7C represents the sources of information about PeriyarTiger Reserve for domestic, foreign and total tourists

Figure 7A

**Sources of information about Periyar Tiger Reserve for Domestic tourists
(in percent)**

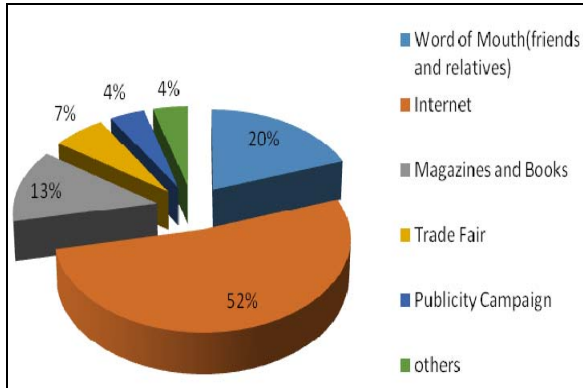


Figure 7B

Source of Information about Periyar Tiger Reserve – Foreign Tourists

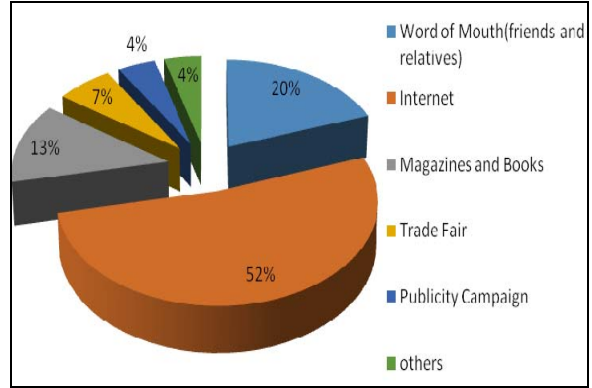
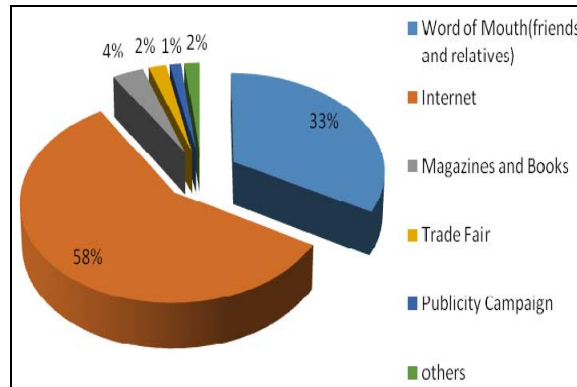


Figure 7C

**Sources of information about Periyar Tiger Reserve for Total Tourists
(in percent)**



4.4 Analysis of seasonality in ecotourism

Seasonality has assumed a lot of importance in tourism and tourism activities are associated with 'seasons' as inflow of tourists, visitation patterns and tourism resources change depending on seasons .Butler (2001) has described seasonality in tourism as a temporal imbalance in the phenomenon of tourism, which may be expressed in terms of dimensions of such elements as number of visitors, expenditure, traffic on highways and other forms of transportation, employment and admissions to attractions.

There are two causes of tourism seasonality – natural and institutionalized (BarOn, 1975). Natural seasonality is the result of nature and its forces, related to the elements of weather and climate. According to Koenig-Lewis and Bischoff (2005), these factors are predictable and recur with only small changes. On the other hand, institutionalized seasonality remains in the domain of people and is associated with legislation, religion, custom, historic conventions etc.,.

The aspect of the seasonality is bound to have an influence in the case of ecotourism as ecotourism is associated with nature. Periyar Tiger Reserve is also affected by 'seasonality'

Table 17 represents the number of tourists visiting Periyar Tiger Reserve in peak and lean seasons.

Table 17

Number of sample respondents visiting Periyar Tiger Reserve in peak and lean seasons

Type of season	Domestic respondents	Foreign respondents	Total respondents
Peak	410 (85.95)	39 (84.78)	449(85.85)
Lean	67 (14.04)	7 (15.21)	74(14.15)

Source: Field Survey-2014-15

Figures in parenthesis indicates percentage to total

Table 17 reveals that 85.95 percent of domestic sample respondents and 84.78 percent of sample foreign respondents visited Periyar Tiger Reserve in peak season. During the peak seasons, from September to April, there had been long and short vacations, and this encouraged the domestic tourists to visit this destination. As for the foreign tourists, generally summer season of Kerala and festival seasons like Onam, Christmas and New year encourage them to visit Kerala, including ecotourism destination of Periyar. Most of them visit during summer season, not severe summer as forest fires destroy the flora and animals (fauna) move into deeper areas of the jungle to quench thirst, as it is believed that wild animals gather near rivers and ponds to drink water and so it is easy to have a glimpse of them.

Lean season in the context of Periyar Tiger Reserve is during the monsoon season – June, July and August. Probably, as most of the schools and colleges in India reopen around this time, families tend to visit less in this time and also due to heavy rains, nature walk paths become slippery and these inconveniences cause the reduction in number of tourists.

4.5 Analysis of Ecotourism experience

4.5.1 Components of ecotourism experience in Peak and Lean Season

The study identifies the components of ecotourism experience as accomadation, display of art forms, availability of eco friendly technology, flora, amenities, number of ecotourism activities, availability of transport, fauna, local culture influence, reasonableness of price, protection of environment. Quality of service, security, quality of information, scenic beauty, enjoyment, memorable, physical comfort, mental relaxation, uniqueness, interaction with local population, age, gender, education, income and marital status.

The study tried to apply One way ANOVA to evaluate if there is a significant difference in mean scores of ecotourism experience for tourists visiting Periyar Tiger Reserve in the peak and lean seasons.

Table 18 represents the results of analysis of variance to find the differences in components of ecotourism experience in peak and lean season.

Table 18

Results of Analysis of variance to find the differences in components of ecotourism experience in peak and lean season

Components of ecotourism experience	F value
Accomadation	2.016 **
Display of art forms	.155
Flora	.167
Availability of Ecofriendly technology	.110
Amenities	2.373 **
Number of Ecotourism activities	1.491 **
Availability of Transport	.238
fauna	.212
Influence of local culture	.159
Reasonableness of Price	.190
Protection of environment	.442
Quality of service	.312
security	.158
Quality of information	.111
Educational Interpretation	.194
Scenic beauty	.115.
enjoyment	.121
memorable	.249
Physical comfort	.392
Mental relaxation	.410
uniqueness	.046
Interaction with local population	.012
Age	.091
Gender	.357
Level of education	.055
income	.113
Marital status	.213

Source: Calculated figures based on field survey

** Statistically significant at 1 percent level.

Table 18 revealed that there is a significant difference in accommodation, amenities and ecotourism activities in peak and lean season at Periyar Tiger Reserve.

4.5.2 Identification of dimensions of Ecotourism Experience: Exploratory Factor Analysis

The study tried to identify the dimensions of ecotourism experience by using exploratory factor analysis.

Table 19 represents the factor loading and communalities of ecotourism experience construct.

Table 19

Factor loadings and communalities of ecotourism experience construct

Factors	Factor Loadings	Communalities
Tangible attributes		
Accommodation	0.666	.562
Display of art forms	0.821	.725
Flora	0.839	.574
Availability of ecofriendly technology enabled systems	0.748	.757
Amenities	0.659	.572
Number of ecotourism activities	0.771	.636
Transport	0.653	.586
Fauna	0.755	.620
Intangible attributes		
Local culture	0.740	.597
Reasonableness of price	0.764	.595
Protection of environment	0.655	.450
Quality of service	0.706	.558
Security	0.788	.651
Quality of information	0.774	.634
Educational Interpretation	0.766	.625
Scenic beauty	0.688	.534
Psychological attributes		
Enjoyment	0.735	.567
Memorable	0.755	.631
Physical comfort	0.763	.662
Mental relaxation	0.768	.663
Uniqueness	0.726	.566
Interaction with local people	0.651	.446
Demographic attributes		
Age	0.692	.578
Gender	0.774	.674
Education	0.740	.642
Income	0.605	.627
Marital status	0.792	.712

Source: Calculated figures based on field survey

For Factor-1 (Tangible attributes), the variable flora had the highest loading of 0.839 and availability of transport had the lowest loading of 0.653. For Factor -2(Intangible attributes) highest loading was 0.788 for security and lowest was 0.655 for protection of environment. For Factor-3(Psychological attributes), the variable mental relaxation had the highest loading of 0.768 and for interaction with local people had the lowest loading of 0.651 For Factor-4(Demographic attributes), the variable marital status had the highest loading of 0.792 and income had the lowest loading of 0.605.

A very low communality value for a variable indicates the variable as an outlier, therefore two variables with less than .5 value had to be removed from further analysis (Lee and Comrey, 1979). The variables 'protection of environment' and 'Interaction with local people' had communality values of .450 and .446 respectively. Therefore they cannot be considered for further analysis.

The identified factors of all these constructs with an Eigen value greater than 1, together explained over 60.90 percent of the variance for ecotourism experience and hence it was assumed that the model represents the data. Communalities between measured items loaded on the exploratory factor model varied from 0.757 for flora to 0.446 for interaction with local people.

Table 20 represents KMO and Bartlett's Test of sphericity

Table 20

KMO and Bartlett's Test of sphericity

Item	Values
Kaiser-Meyer-Olkin (KMO) Test	0.913
Bartlett's Test of Sphericity (Bartlett Statistic)	Chisquare: 7409.59 (df:351; p = 0.000)

Source: Calculated figures based on field survey

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.913. The Bartlett Test of Sphericity was significant ($p < 0.001$) with a Chi Square value of

7409.59 with 351 degrees of freedom which is considered to be very good for further analysis.

Table 21 represents the factors, number of indicators of each factor and cumulative percent of Variance.

Table 21

Factors, Indicators of each factor and cumulative percent of variance

Factor	Factor name	Number of indicators	Cumulative percent of Variance
1	Tangible attributes	8	18.623
2	Intangible attributes	7	36.138
3	Psychological	5	49.508
4	Demographic	5	60.908

Source: Calculated figures based on field survey

Alpha Extraction method of factoring yielded four factor structure for ecotourism experience, as shown in Table 21. The factors identified were tangible, intangible, psychological and demographic attributes.

Table 22 represents the reliability estimate of the rotated factors.

Table 22

Reliability estimate of the rotated factors

Factor	Reliability estimate (Cronbach's Alpha)
Tangible attributes	0.905
Intangible attributes	0.893
Psychological attributes	0.855
Demographic attributes	0.852
Overall reliability	0.910

Source: Calculated figures based on field survey

It is evident from Table 22, that the Cronbach's Alpha was high, thus indicating adequate reliability of the extracted factors.

4.5.3 Confirmation of Dimensions of Ecotourism experience - Confirmatory Factor Analysis

The current study tried to apply confirmatory factor analysis to test the ability of predefined factor model to fit an observed set of data since confirmatory factor analysis helps in providing estimates for each parameter of the measurement model.

Confirmatory factor analysis was conducted for each of the identified dimension of the measurement model. The identified dimensions in this study includes four factors-tangible, intangible, psychological and demographic.

All the individual scale items (25 indicators) were loaded on the appropriate factors along with correlation among the factors.

4.5.4 Measurement model for first order constructs- Tangible, Intangible, Psychological and Demographic attributes:

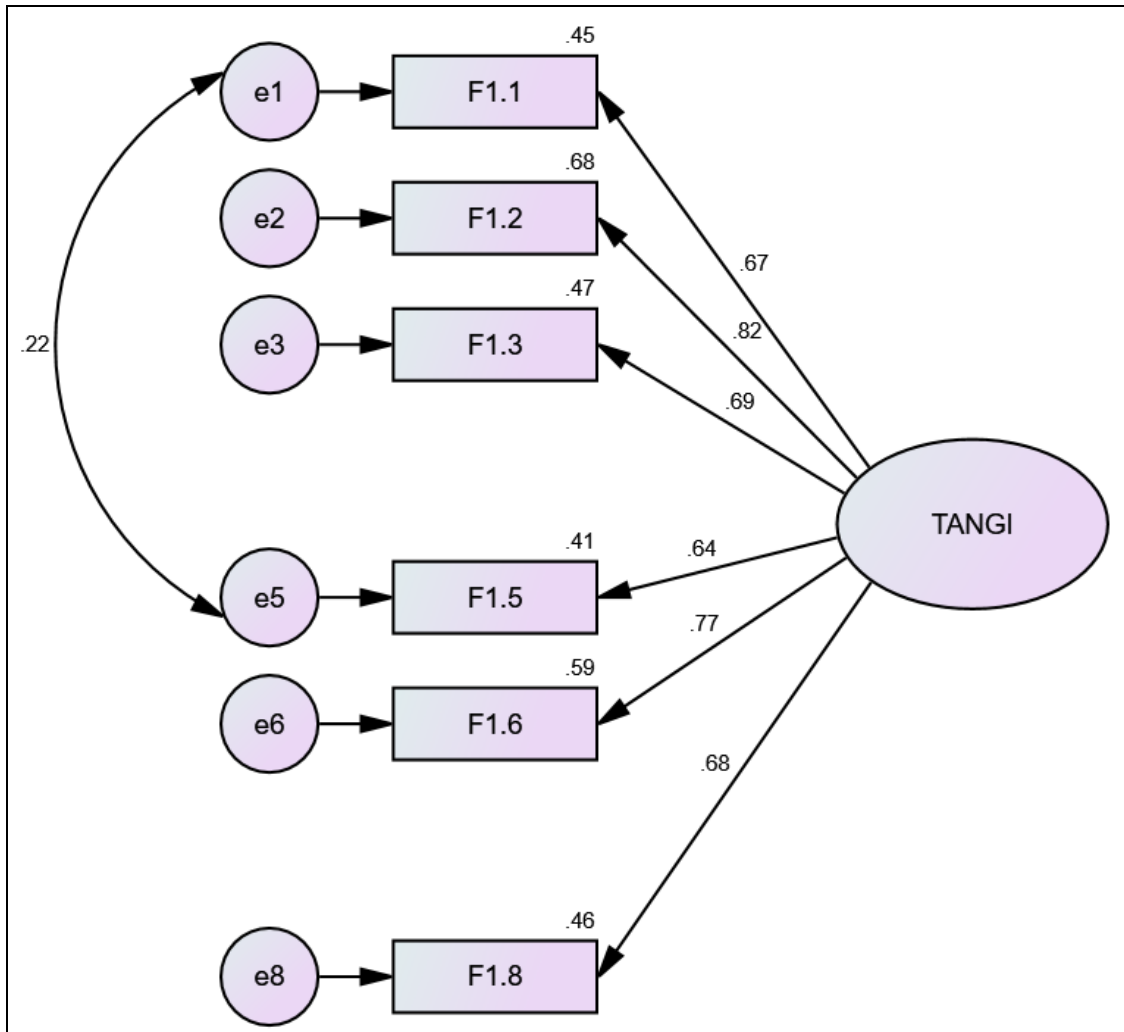
The measurement model was fitted by using AMOS 16 version.

4.5.4.1 Measurement model for tangible attributes dimension (Tangible attributes coded as Tangi)

Figure 8 represents measurement model for 'Tangible attributes'

Figure 8

Measurement model for 'Tangible attributes'



The eight indicator variable model of tangible dimensions was suggesting poor fitting model in the first estimate. The RMSEA and CFI were above permissible level. On verification of modification indices, two factor variables 'ecofriendly technology enabled system' and 'availability of transport.' was showing cross loading to other variable and were found to be the reason for poor fit and hence were removed. The resulting model with 6 indicators relating to tangible dimension was suggesting poor fitting model as the GFI, RMSEA and CFI were all found to be above permissible level. Therefore, as per modification indices, an error correlation was added between indicator variables F1.1 and

F1.5 considering the theoretical grounds, as to correlate error terms, there needs to be a strong theoretical justification (Joreskog and Long 1993). These variables represent responses related to accommodation and amenities and hence theoretically, there is a possibility for their error variables to have correlation. All the paths as shown in the model are significant as critical ratio were above 1.96.

Table 23 represents the goodness of fit indices of the measurement model for Tangible attributes.

Table 23
Goodness of Fit Indices of the -Tangible Attributes

Fit measures	Indicators	Value	Threshold value
Absolute Fit Measures	CMIN/DF	2.97	≤5
	RMSEA	.061	≤0.08
	Goodness of fit index (GFI)	1.00	≥.90
Incremental fit measures	Non normal fit index (NFI)	.956	≥.90
	Comparative fit index (CFI)	.962	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.903	≥.90

Source: Calculated values based on field survey

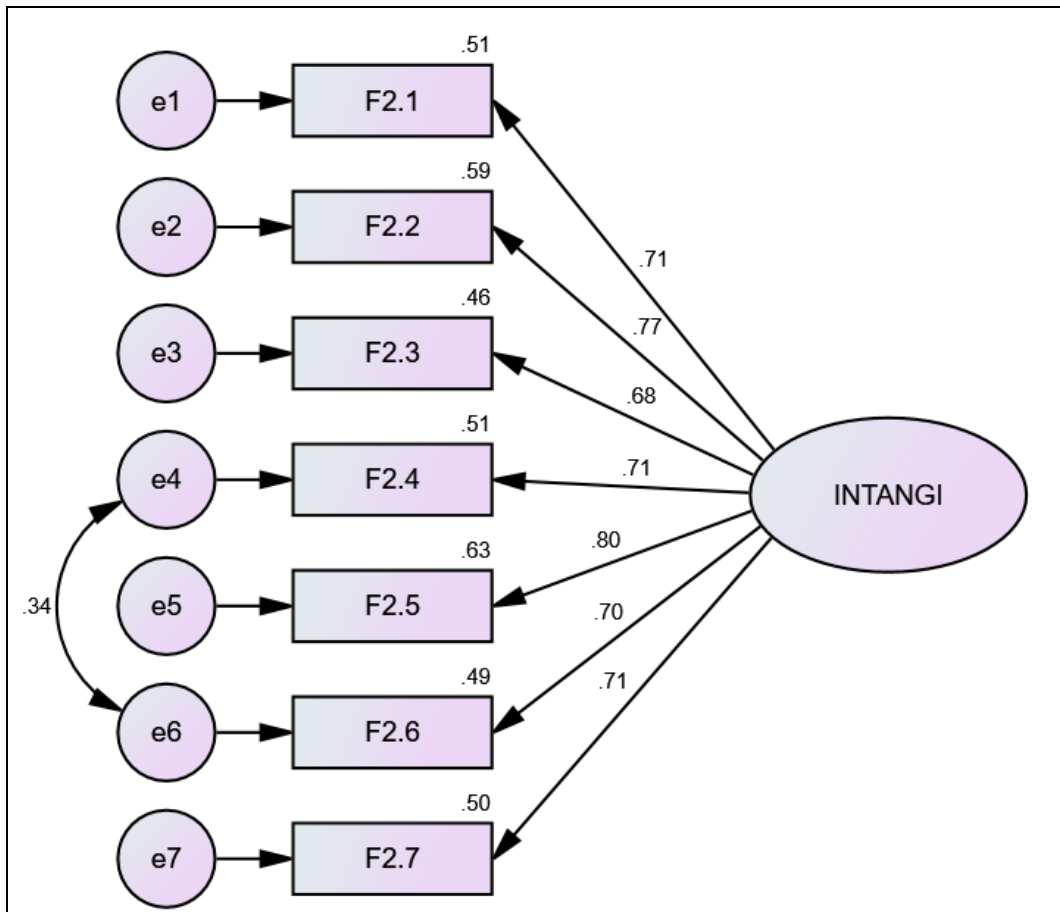
The composite reliability and average variance extracted for the measurement model for tangible attributes dimension were .834 and was .501 respectively.

4.5.4.2 Measurement model for Intangible Attributes dimension (coded as Intangi)

Figure 9 represents measurement model for 'Intangible attributes' dimension.

Figure 9

Measurement Model for intangible attributes



The seven indicator variable model of Intangible attributes dimension was found to be suggesting poor fitting model in the first estimate. All the required measures like The Normed data, CFI were above the permissible limits. Therefore, as per modification indices, an error correlation was added between indicator variables F2.4 and F2.6 considering the theoretical grounds. These variables represent responses related to quality of service and quality of information and hence theoretically, there is a possibility for their error variables to have correlation.

So the identified model was found to be right fitting model with seven indicators as illustrated in Figure 6..All the path shown in the model were significant as critical ratio were above 1.96.

Table 24 represents the goodness of fit indices of the measurement model for intangible attributes.

Table 24

Goodness of Fit Indices of the measurement - Intangible Attributes

Fit measures	Indicators	Intangible attributes	Threshold value
Absolute Fit Measures	CMIN/DF	2.979	≤5
	RMSEA	.063	≤0.08
	Goodness of fit index (GFI)	.977	≥.90
Incremental fit measures	Non normal fit index (NFI)	.976	≥.90
	Comparative fit index (CFI)	.985	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.951	≥.90

Source: Calculated values based on field survey

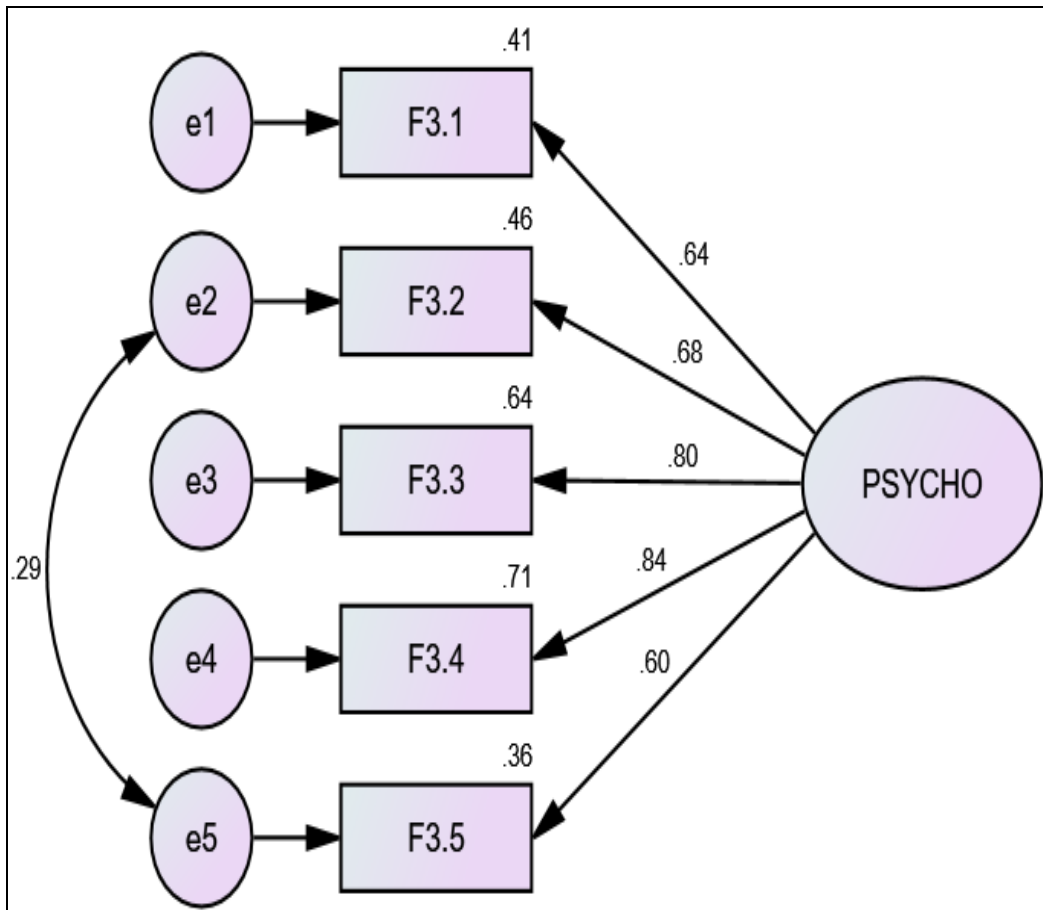
The composite reliability for the measurement model for intangible attributes dimension was.882 and average variance extracted was.528.

4.5.4.3 Measurement model for Psychological attributes dimension (coded as Psycho)

Figure 10 represents measurement model for ‘Psychological attributes’ dimension.

Figure 10

Measurement model for Psychological attributes' dimension



The five indicator variable model of psychological dimensions was suggesting poor fitting model in the first estimates. The CFI was not within permissible level. Therefore, as per modification indices, an error correlation was added between indicator variables F3.2 and F3.5, considering the theoretical grounds, These variables represent responses related to memorable experience and uniqueness of experience and hence theoretically, there is a possibility for their error variables to have correlation.

All the paths shown in the model were significant as critical ratio were above 1.96.

Table 25 represents the goodness of fit indices of the measurement model for psychological attributes

Table 25
Goodness of Fit indices of the measurement model - Psychological Attributes

Fit measures	Indicators	value	Threshold Value
Absolute Fit Measures	CMIN/DF	.909	≤5
	RMSEA	.000	≤0.08
	Goodness of fit index (GFI)	.997	≥.90
Incremental fit measures	Non normal fit index (NFI)	.996	≥.90
	Comparative fit index (CFI)	1.00	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.989	≥.90

Source: Calculated values based on field survey

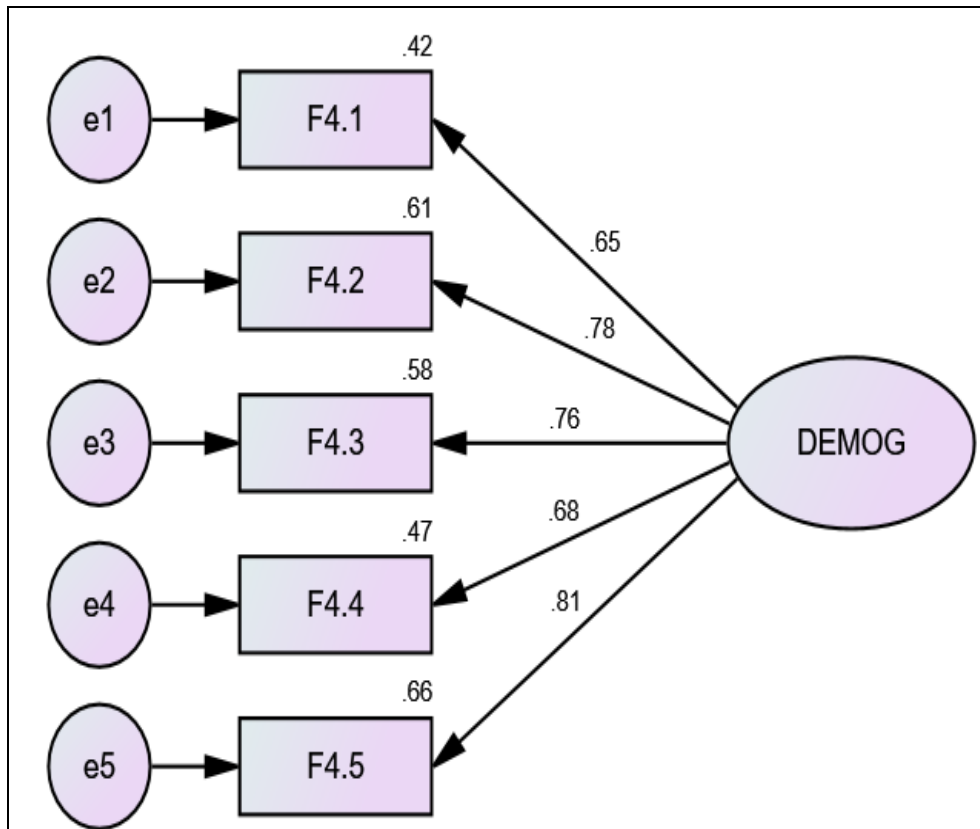
The composite reliability and average variance extracted for the measurement model for psychological attributes dimension were .834 and .516 respectively.

4.5.4.4 Measurement model for demographic attributes dimension (coded as Demog)

Figure 11 represents measurement model for 'Demographic attributes' dimension.

Figure 11

Measurement model for Demographic attributes



The five indicator variable model of demographic dimensions was suggesting good fitting model in the first estimates. The Normed data, RMSEA, CFI were within permissible level. The model was found to be good fitting model with five recommended indicators as illustrated in Figure 11. All the paths shown in the model were significant as critical ratio were above 1.96.

Table 26 represents the goodness of fit indices of the measurement model for demographic attributes.

Table 26

Goodness of Fit indices of the measurement model –Demographic Attributes

Fit measures	Indicators	Value	Threshold value
Absolute Fit Measures	CMIN/DF	1.124	≤5
	RMSEA	.016	≤0.08
	Goodness of fit index (GFI)	.996	≥.90
Incremental fit measures	Non normal fit index (NFI)	.995	≥.90
	Comparative fit index (CFI)	.999	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.987	≥.90

Source: Calculated values based on field survey

The composite reliability for the measurement model for demographic attributes dimension was.842 and average variance extracted was.567.

4.5.5 Confirmatory Model for ecotourism experience construct

The statistical significance of relationships among ecotourism experience and its identified and extracted dimensions such as Tangible(coded as Tang), Intangible attributes (coded as Intangi) and Psychological (coded as Psycho), Demographic attributes(coded as Demo) were of main interest in this study. The well-fit measurement models of ecotourism experience construct such as tangible, intangible, psychological and demographic attributes, were taken together to arrive at a fitting structural model of ecotourism experience construct.

The statistical significance of AMOS output was tested. The critical ratios are to be > ±1.96 for confirming statistical significance at the probability level of .05 and the threshold limit for the standard co-variance must be less than or within 2.58 for the purpose of statistically significant co-variance between two variables.

The first model had to be respecified as the standard residual covariance between some of the variables was more than 2.58. The model respecification was on the basis of modification indices to finalise a good fitting model explaining the ecotourism experience construct. The indicator variable 'income' attached to 'demographic dimension' was selected for removal at respecification stage as the item was having cross loadings with many other variables.

Figure 12 represents the respecified confirmatory model for ecotourism experience construct.

Figure 12

Respecified Confirmatory Model for Ecotourism Experience Construct

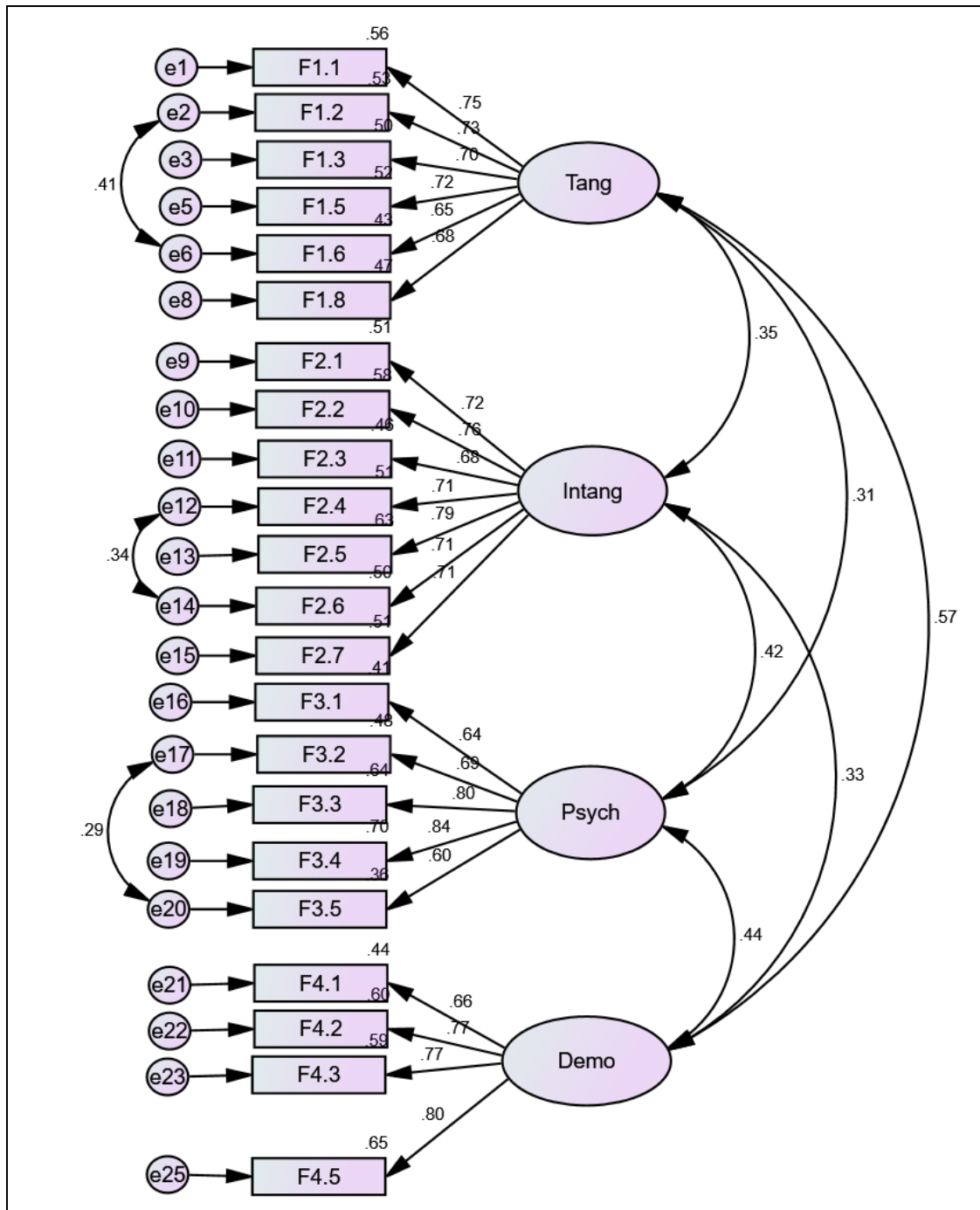


Table 27 represents standardised residual covariances among tangible attributes of the re-specified model.

Table 27

Standardised Residual Covariances among tangible attributes

	F1.1	F1.2	F1.3	F1.5	F1.6	F1.8
F1.1	.000					
F1.2	-.579	.000				
F1.3	-.440	.406	.000			
F1.5	.255	.379	.097	.000		
F1.6	.257	.000	.597	-1.204	.000	
F1.8	-.333	.626	.628	-1.076	1.301	.000

Source: Calculated values based on field survey

Table 28 represents standardised residual covariances among intangible attributes of the re-specified model

Table 28

Standardised Residual Covariances among Intangible attributes

	F2.1	F2.2	F2.3	F2.4	F2.5	F2.6	F2.7
F2.1	.000						
F2.2	-1.013	.000					
F2.3	1.027	-.254	.000				
F2.4	.272	-.073	-.724	.000			
F2.5	-.232	1.124	-.705	-.248	.000		
F2.6	.134	.686	-.238	.000	-.087	.000	
F2.7	.233	-.353	.618	.309-	-.251	-.892	.000

Source: Calculated values based on field survey

Table 29 represents standardised residual covariances among psychological attributes of the re-specified model

Table 29

Standardised Residual Covariances among Psychological attributes

	F3.1	F3.2	F3.3	F3.4	F3.5
F3.1	.000				
F3.2	.460	.000			
F3.3	-.094	-.076	.000		
F3.4	-.087	-.338	.178	.000	
F3.5	.515	.000	-.386	.136	.000

Source: Calculated values based on field survey

Table 30 represents standardised residual covariances among Demographic attributes of the re-specified model

Table 30

Standardised Residual Covariances among Demographic attributes

	F4.1	F4.2	F4.3	F4.5
F4.1	.000			
F4.2	-.761	.000		
F4.3	-.313	.283	.000	
F4.5	.318	.312	-.214	.000.

Source: Calculated values based on field survey

Table 31. shows the goodness of fit indices of confirmatory model for ecotourism experience construct..

Table 31
Goodness of Fit indices of confirmatory model for ecotourism experience construct

Fit measures	Indicators	value	Threshold value
Absolute Fit Measures	CMIN/DF	2.421	≤5
	RMSEA	.053	≤0.08
	Goodness of fit index (GFI)	.917	≥.90
Incremental fit measures	Non normal fit index (NFI)	.911	≥.90
	Comparative fit index (CFI)	.945	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.895	≥.90

Source: Calculated values based on field survey

The confirmatory model was found to be fit as all the fit indices were within the threshold value.

Stages in the development of the Confirmatory Model

Stage 1: From the initial list of 27 indicator variables, 2 variables relating to 'Protection of environment' and 'Interaction with people' was removed due to low communality values.

Stage 2: Out of 25 indicators, 2 were removed at the stage of development of measurement model for the dimensions identified after exploratory factor analysis. 'Ecofriendly technology enabled system' and 'availability of transport' were removed.

Stage 3: Out of 23 indicators, one was removed at the respecification stage while evaluating the confirmatory model for ecotourism experience construct. 'Income' was removed.

Finally, 22 indicators were identified for ecotourism experience construct.

Table 32 represents list of variables included in the construct of Ecotourism experience after confirmatory factor analysis

Table 32

List of variables included in the construct of ecotourism experience after confirmatory factor analysis

Construct	Variables	Number of Indicators	Cronbach's Alpha
Tangible attributes	Accomadation, Amenities, Display of art forms, Flora, fauna, number of ecotourism activities	6	.864
Intangible attributes	Quality of service, local culture influence, reasonableness of price, Environment education, quality of information, security, scenic beauty	7	.888
Psychological attributes	Enjoyment, memorable, uniqueness, physical comfort, mental relaxation	5	.846
Demographic attributes	Age, gender, level of education, marital status	4	.832

Source: Calculated values based on field survey

4.5.6 Validation of ecotourism experience construct

Ecotourism experience construct was validated based on the following criteria:

➤ **Evaluation of CMV**

In this study, Harmon one Factor Test was conducted to check for CMV and it revealed that 30.52 percentage was the percentage of variance that emerged from the single factor. As the value was less than 50%, the presence of CMV can be ruled out. (Podsakoff et al. (2003)

➤ **Convergent Validity**

Convergent validity was found out by calculating standard regression co-efficients, critical ratio and factor loading, average variance extracted and Cronbach's alpha.

Table 33 represents standard regression co-efficients, critical ratio and factor loadings of tangible, intangible, psychological and demographic attributes

Table 33

Standard regression co-efficients, critical ratio and factor loadings of tangible, intangible, psychological and demographic attributes

	Estimate	P value	Std Reg coeff	C.R.
F1.1<--- Tang	.751	***	.753	14.388
F1.2<--- Tang	.725	***	.730	13.943
F1.3<--- Tang	.704	***	.702	13.644
F1.5<--- Tang	.722	***	.723	13.937
F1.6<--- Tang	.653	***	.652	12.683
F1.8<--- Tang	.683	***	.684	14.056
F2.1<--- Intang	.716	***	.723	14.882
F2.2<--- Intang	.762	***	.765	15.797
F2.3<--- Intang	.679	***	.689	14.145
F2.4<--- Intang	.714	***	.711	14.792
F2.5<--- Intang	.794	***	.798	16.406
F2.6<--- Intang	.706	***	.715	14.627
F2.7<--- Intang	.713	***	.714	14.851
F3.1<--- Psych	.639	***	.645	11.301
F3.2<--- Psych	.689	***	.698	14.209
F3.3<--- Psych	.797	***	.809	13.041
F3.4<--- Psych	.839	***	.845	13.324
F3.5<--- Psych	.601	***	.605	11.054
F4.1<--- Demo	.661	***	.665	14.638
F4.2<--- Demo	.774	***	.779	17.369
F4.3<--- Demo	.765	***	.778	17.183
F4.5<--- Demo	.805	***	.809	13.256

Source: Calculated values based on field survey

In this study, all of the measurement items represented their factors significantly as critical ratio of every item exceeded 1.96. The factor loadings ranged from .605 to .845 and no loading was less than the recommended value (0.5).

Further in the current study, the average variance extracted (AVE) of all the minor constructs forming the ecotourism experience construct- Tangible, Intangible, Psychological and Demographic attributes were above 0.5 and the Cronbach's alpha was greater than 0.7.

➤ **Estimation of composite reliability**

The composite reliability was found out by calculating squared multiple correlations of the indicators.

Table 34 represents critical ratio, P values and squared multiple correlations of all Indicators

Table 34**Critical Ratio, P values and Squared Multiple Correlations of all Indicators**

	C.R.	P value	SMC
F1.1<--- Tang	14.388	***	.564
F1.2<--- Tang	13.943	***	
F1.3<--- Tang	13.644	***	
F1.5<--- Tang	13.937	***	.521
F1.6<--- Tang	12.683	***	.427
F1.8<--- Tang	14.056	***	.466
F2.1<--- Intang	14.882	***	.512
F2.2<--- Intang	15.797	***	.581
F2.3<--- Intang	14.145	***	.461
F2.4<--- Intang	14.792	***	.510
F2.5<--- Intang	16.406	***	.630
F2.6<--- Intang	14.627	***	.499
F2.7<--- Intang	14.851	***	.509
F3.1<--- Psych	11.301	***	.408
F3.2<--- Psych	14.209	***	.475
F3.3<--- Psych	13.041	***	.636
F3.4<--- Psych	13.324	***	.704
F3.5<--- Psych	11.054	***	.364
F4.1<--- Demo	14.638	***	.437
F4.2<--- Demo	17.369	***	.598
F4.3<--- Demo	17.183	***	.586
F4.5<--- Demo	13.256	***	.648

Source: Calculated values based on field survey

The composite reliability was established since squared multiple correlation ranged from 0.364 to .704.

Table 35 represents the composite reliability and variance extracted for each minor construct

Table 35

Composite Reliability and Variance Extracted for each Minor construct

S.No	Name Of the minor construct	Composite Reliability	Variance Extracted
1.	Tangible attributes	.834	.501
2.	Intangible attributes	.882	.528
3.	Psychological attributes	.834	.516
4.	Demographic attributes	.842	.567

Source: Calculated values based on field survey

It is evident from Table 35 that the composite reliability was greater than .8 for all the minor constructs.

➤ **Discriminant Validity**

Discriminant validity was found out by calculating correlation among constructs.

Table 36 represents squared correlations among construct

Table 36

Squared Correlations among constructs

Correlations	Estimate	SIC
Demo<--> Tang	.572	.327
Intang<--> Psych	.421	.177
Demo<--> Psych	.441	.194
Intang<-->Demo	.328	.107

Source: Calculated values based on field survey

None of the squared inter construct correlations among variables were above 0.85. The results suggested adequate discriminant validity of the measurement.

➤ **Nomological Validity**

Nomological value was tested by calculating the covariances between the constructs

Table 37 represents the covariance among constructs.

Table 37
Covariance among constructs

Covariance	Estimate	SE	CR	P value
Intang<--> Tang	.354	.030	6.010	***
Tang<--> Psych	.309	.030	5.183	***
Demo<--> Tang	.572	.038	8.476	***
Intang<--> Psych	.421	.027	6.612	***
Demo<--> Psych	.441	.030	6.874	***
Intang<-->Demo	.328	.027	5.780	***

Source: Calculated values based on field survey

It is evident from Table 37 that the covariance among constructs were positive and significant.

From all these observations made, it is confirmed that the scale developed for measuring ecotourism experience in Periyar Tiger Reserve is having adequate soundness for measuring ecotourism experience in ecotourism destinations.

4.6 Analysis of ecotourist satisfaction

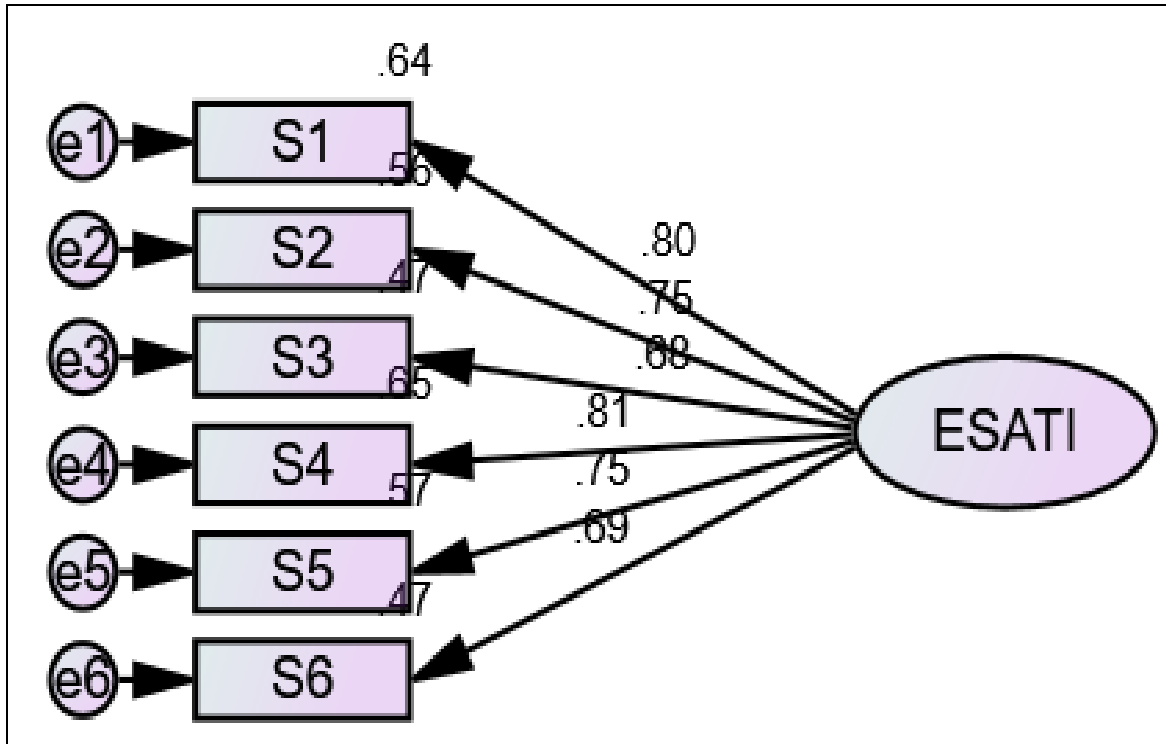
Ecotourist satisfaction refers to the satisfaction derived by the ecotourist at the destination.

4.6.1 Measurement model for ecotourist satisfaction

Figure 13 represents measurement model for ecotourist satisfaction.

Figure 13

Measurement Model for Ecotourist satisfaction



The six indicator variable model of ecotourism satisfaction was suggesting good fitting model in the first estimates. The Normed data, RMSEA, CFI were within permissible level. The model was found to be good fitting model with six recommended indicators as illustrated in Figure 13..All the paths shown in the model were significant as critical ratio were above 1.96.

Table 38 represents the goodness of fit indices of the measurement model for 'ecotourist satisfaction

Table 38

Goodness of Fit indices of the measurement model for ecotourist satisfaction

Fit measures	Indicators	Value	Threshold value
Absolute Fit Measures	CMIN/DF	2.301	≤5
	RMSEA	.051	≤0.08
	Goodness of fit index (GFI)	.987	≥.90
Incremental fit measures	Non normal fit index (NFI)	.985	≥.90
	Comparative fit index (CFI)	.992	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.969	≥.90

Source: Calculated values based on field survey

The measurement model for ecotourist satisfaction was found to be sound since all the estimated goodness of fit statistics were within the threshold limit.

The composite reliability and average variance extracted for the measurement model for ecotourist satisfaction dimension were .847 and .543 respectively.

4.7 Analysis of future behavioral intention

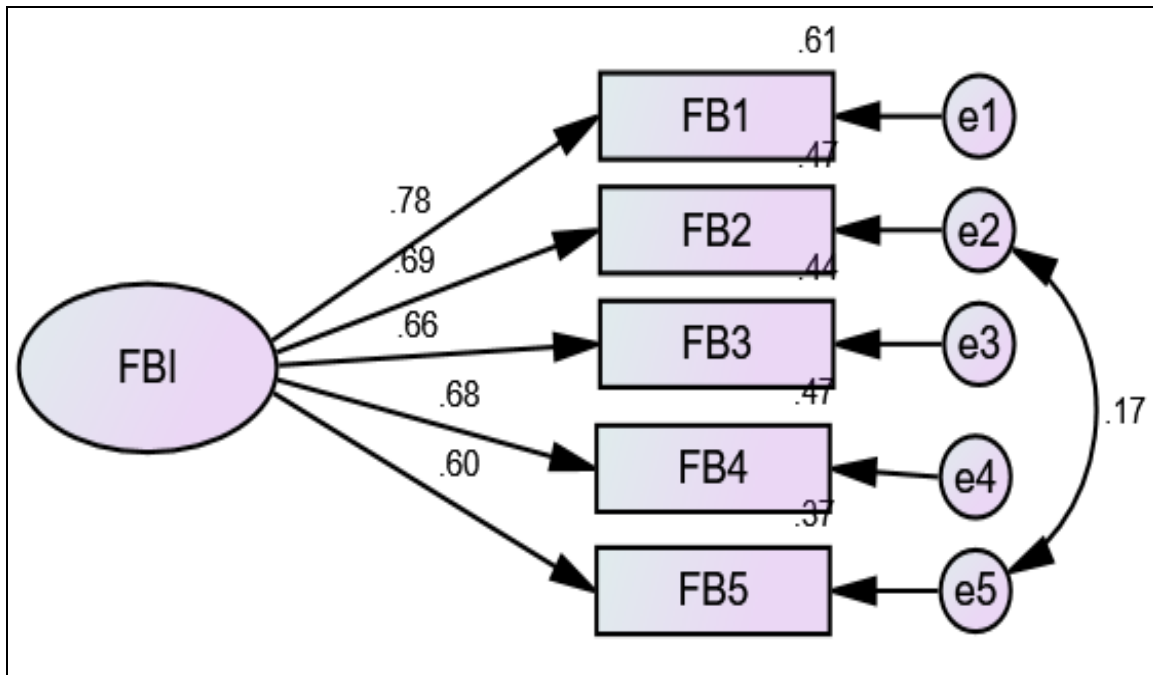
Future behavioural intention refers to the intention of the tourist in the future on the basis of the current visit

4.7.1 Measurement model for future behavioural intention

Figure 14 represents the measurement model for the future behavioural intention.

Figure 14

Measurement Model for future behavioural intention



The five indicator variable model for future behavioural intention was suggesting poor fitting model in the first estimates. The CFI was not within permissible level. Therefore, as per modification indices, an error correlation was added between indicator variables FB2 and FB5, considering the theoretical grounds. These variables represent responses related to recommendation intention and 'say positive things about the destination' and hence theoretically, there is a possibility for their error variables to have correlation.

Table 39. represents the goodness of fit indices of the measurement model for 'Future Behavioural Intention'

Table 39

Goodness of fit indices of the measurement model for future behavioural intention

Fit measures	Indicators	Value	Threshold value
Absolute Fit Measures	CMIN/DF	1.218	≤5
	RMSEA	.021	≤0.08
	Goodness of fit index (GFI)	.996	≥.90
Incremental fit measures	Non normal fit index (NFI)	.994	≥.90
	Comparative fit index (CFI)	.999	≥.90
Parsimony fit measures	Adjusted goodness of fit index (AGFI)	.985	≥.90

Source: Calculated values based on field survey

The measurement model for future behavioural intention was found to be sound since all the estimated goodness of fit statistics were within the threshold limit. The composite reliability and average variance extracted for the measurement model for future behavioral intention was .869 and .518 respectively.

4.8 Analysis of relationship between ecotourism experience, ecotourist satisfaction and future behavioural intention

Relationship between ecotourism experience, ecotourist satisfaction and future behavioural intention were analysed by fitting two models- Individual model and integrated model. These models were fitted by using Warp PLS 2.0.

4.8.1 Individual Model for ecotourism experience construct

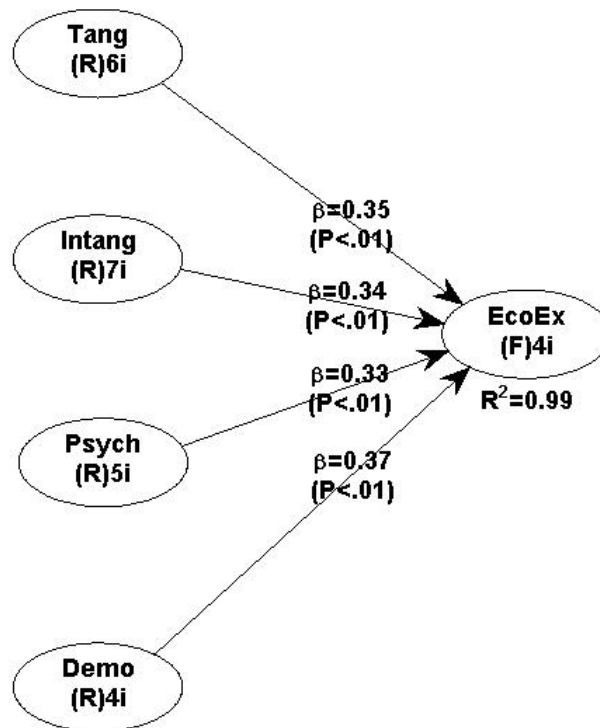
Ecotourism construct has been conceptualized as formative because if any of the dimensions - Tangible, Intangible, Psychological and demographic attribute changes, it shall result in a change in the overall magnitude of ecotourism experience, without necessarily affecting the rest of the dimensions.

The ecotourism experience was conceptualized as second order formative construct on theoretical grounds. It can be theoretically justified as ecotourism experience was assumed to cause satisfaction development among tourists.

Figure 15 represents the identified dimensions of ecotourism experience.

Figure 15

Identified dimensions of ecotourism experience



All hypothesized dimensions namely, Tangible (Tang) ($\beta = 0.35$), Intangible (Intang) ($\beta = 0.34$), Psychological (Psych) ($\beta = 0.33$) and Demographic (Demo) ($\beta = 0.37$) were found significant at $p<0.01$. The overall explained variance for the ecotourism experience was 99 percent. Therefore it can be concluded that the ecotourism experience is a formative construct.

Table 40. represents the model fit indices and p values of ecotourism experience construct

Table 40

Model fit indices and P values of Ecotourism experience construct

Model fit indices	P values
APC=0.346	P <0.001
ARS=0.990	P <0.001
AVIF=1.369	acceptable if < 5

Source: Calculated values based on field survey

The model developed was found to be fit as p values of APC, ARS were lesser than 0.001 and AVIF (1.369) was lesser than 5.

4.8.2 Validation of individual model for ecotourism experience construct

The validation of various dimensions of ecotourism experience was found out through composite reliability, Cronbach alpha, convergent validity and discriminant validity.

Table 41 represents composite reliability and Cronbach's alpha after WarpPLS.

Table 41

Composite reliability and Cronbach's alpha after WarpPLS

Dimension	Composite reliability	Cronbach alpha
Tangible	.899	.865
Intangible	.914	.890
Psychological	.891	.846
Demographic	.892	.836

Source: Calculated values based on field survey

In order to find out the convergent validity the factor loadings and P values for each dimension of ecotourism experience were calculated. Table 42 represents the factor loadings and P values for ecotourism experience

Table 42**Factor loadings and P values for ecotourism experience**

	Tangible	Intangible	Psychological	Demographic	P value
F1.1	.770				<0.001
F1.2	.827				<0.001
F1.3	.765				<0.001
F1.5	.743				<0.001
F1.6	.781				<0.001
F1.8	.748				<0.001
F2.1		.761			<0.001
F2.2		.795			<0.001
F2.3		.732			<0.001
F2.4		.794			<0.001
F2.5		.812			<0.001
F2.6		.783			<0.001
F2.7		.752			<0.001
F3.1			.729		<0.001
F3.2			.802		<0.001
F3.3			.817		<0.001
F3.4			.842		<0.001
F3.5			.745		<0.001
F4.1				.754	<0.001
F4.2				.835	<0.001
F4.3				.827	<0.001
F4.5				.858	<0.001

Source: Calculated values based on field survey 2014-15

All the factor loadings were more than .5 at p value <0.001; establishing convergent validity. Further variance inflation factor (VIF) was calculated to

confirm convergent validity. Table 43 represents Indicator weights and VIF of ecotourism experience construct.

Table 43

Indicator weights and VIF of ecotourism experience construct

	Tangible	Intangible	Psychological	Demographic	P value	VIF
F1.1	0.215	0.000	0.000	0.000	<0.001	1.803
F1.2	0.231	0.000	0.000	0.000	<0.001	2.383
F1.3	0.213	0.000	0.000	0.000	<0.001	1.745
F1.5	0.207	0.000	0.000	0.000	<0.001	1.763
F1.6	0.218	0.000	0.000	0.000	<0.001	2.114
F1.8	0.209	0.000	0.000	0.000	<0.001	1.675
F2.1	0.000	.181	0.000	0.000	<0.001	1.840
F2.2	0.000	.189	0.000	0.000	<0.001	2.142
F2.3	0.000	.174	0.000	0.000	<0.001	1.171
F2.4	0.000	.188	0.000	0.000	<0.001	2.189
F2.5	0.000	.193	0.000	0.000	<0.001	2.267
F2.6	0.000	.186	0.000	0.000	<0.001	2.160
F2.7	0.000	.178	0.000	0.000	<0.001	1.800
F3.1	0.000	0.000	.235	0.000	<0.001	1.536
F3.2	0.000	0.000	.258	0.000	<0.001	1.885
F3.3	0.000	0.000	.263	0.000	<0.001	2.075
F3.4	0.000	0.000	.271	0.000	<0.001	2.238
F3.5	0.000	0.000	.240	0.000	<0.001	1.655
F4.1	0.000	0.000	0.000	.281	<0.001	1.537
F4.2	0.000	0.000	0.000	.311	<0.001	1.968
F4.3	0.000	0.000	0.000	.308	<0.001	1.875
F4.5	0.000	0.000	0.000	.320	<0.001	2.112

Source: Calculated values based on field survey

The variance inflation factor were less than 5 and indicator weights had $p < .001$; thus establishing convergent validity.

In order to find out discriminant validity, latent variable correlations and average variance extracted were calculated

Table 44 represents latent variable correlations and average variance.

Table 44
Latent variable correlations and AVE among ecotourism experience dimensions

	Tangible	Intangible	Psychological	Demographic	AVE
Tangible	0.773	0.283	0.195	0.482	.597
Intangible	0.283	0.776	0.383	0.287	.602
Psychological	0.195	0.383	0.788	0.363	.621
Demographic	0.482	0.287	0.363	0.819	.671

(All the correlations significant at $p < 0.001$)

Source: Calculated values based on field survey

Discriminant validity was established since, all the square root of AVE shown in the diagonal of the latent correlation matrix are higher than the correlation involving that latent variable.

The validity of the formative constructs was established in this model due to absence of multicollinearity, validity in latent formative measurement and establishment of discriminant and convergent validity.

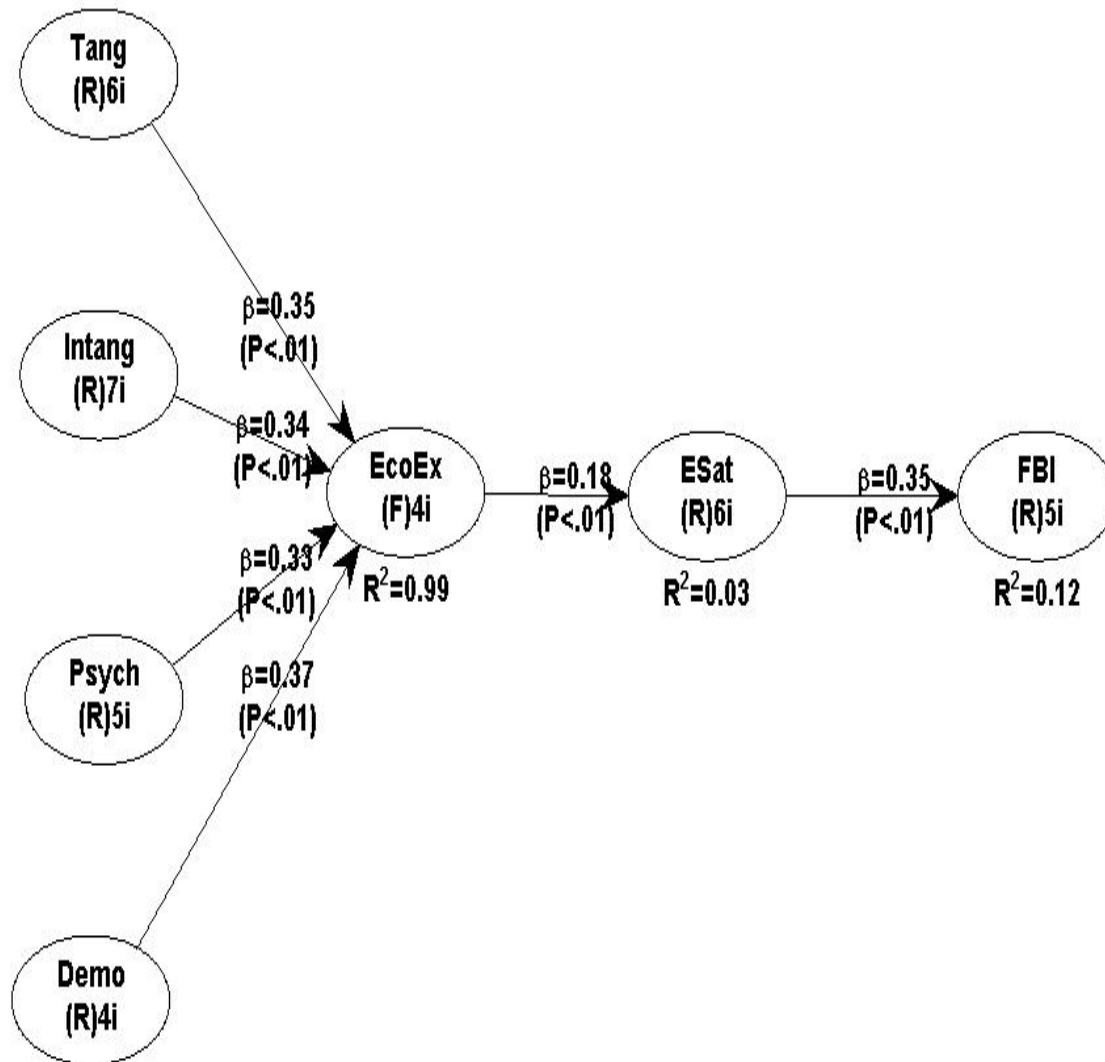
4.8.3 Integrated Model

In this analysis, the effect of Ecotourism experience as formative second order construct was tested on ecotourist satisfaction. The effect of ecotourist satisfaction (the mediating construct) on future behavioural intention was also tested in the study.

Figure 16 represents the integrated model to find out the relationship between the ecotourism experience, ecotourist satisfaction and future behavioral intention

Figure 16

Integrated model to find out the relationship between the ecotourism experience, ecotourist satisfaction and future behavioral Intention



The analysis of the integrated model linking the influence of ecotourism construct on ecotourist satisfaction and ecotourist satisfaction on future behavioural intention showed that all hypothesized relationship were supported. i.e., the relationship between ecotourism experience and ecotourism satisfaction ($\beta = 0.18$) and ecotourist satisfaction and future behavioural intention ($\beta = 0.35$). Ecotourism experience had direct significant impact on ecotourist satisfaction and ecotourist satisfaction has a direct significant impact on future behavioural intention at $p < 0.01$.

Table 45 shows the model fit indices with p values of the integrated model.

Table 45

Model fit indices and P values of the integrated model

Model fit indices	P values
APC=0.319	P= <0.001
ARS=0.382	P= <0.001
AVIF=1.369	acceptable if ≤ 5

Source: Calculated values based on field survey

All the three fit criteria were found within the limit. Therefore it can be concluded that the model has acceptable predictive and explanatory quality, and that the data is well represented by the model.

4.8.4 Validation of Integrated Model

The model consists of one formative construct – ecotourism experience and two reflective constructs – ecotourist satisfaction and future behavioural intention.

4.8.4.1 Validation of reflective constructs

The construct of **Ecotourist satisfaction** was measured in reflective manner. The indicators of reliability are composite reliability coefficient, Cronbach’s alpha and average variance extracted. All of these which are

obtained after the estimation of the model are above the threshold limits (composite reliability coefficient (0.912), Cronbach's alpha (0.883) and average variance extracted(AVE=.632).

Convergent validity was found out by calculating loadings of each indicator of the construct and their p values.

Table 46 represents factor Loadings and p values for ecotourist satisfaction construct

Table 46

Factor Loadings and p values for ecotourist satisfaction construct

Indicators	Loading to Ecotourist satisfaction construct	P values
Destination attributes	0.800	<0.001
Service quality	0.753	<0.001
Non ecotourism activities	0.685	<0.001
Ecotourism activities	0.817	<0.001
Emotional connections	0.758	<0.001
Cognition	0.690	<0.001

Source: Calculated values based on field survey

Convergent validity was established as all the loadings were above 0.5 and were significant at $p < 0.05$.

The construct of future behavioural intention was measured in reflective manner. The reliability coefficients which are obtained after the estimation of the model were above the threshold limits (composite reliability coefficient (0.814), Cronbach's alpha(0.820) and average variance extracted (AVE=.582).

Convergent validity was found out by calculating loadings of each indicator of the construct and their p values.

Table 47 represents factor loadings and p values for future behavioural intention construct

Table 47

Factor Loadings and P values for future behavioural intention construct

Indicators	Loading to Future Behavioural Intention construct	P values
Revisitation Intention	0.786	<0.001
Recommendation intention	0.695	<0.001
Choose destination	0.669	<0.001
Likelihood to say positive things	0.689	<0.001
Deeper involvement in tourism	0.609	<0.001

Source: Calculated values based on field survey

Convergent validity was established as all the loadings were above 0.5 and are significant at $p < 0.05$

To ascertain the discriminant validity of both reflective and formative constructs the latent variable correlations were calculated.

Table 48 represents latent variable correlation of constructs

Table 48

Latent variable correlation of constructs

	Esat	FBI	Eco ex
Esat	0.795	0.344	0.045
FBI	0.344	0.763	0.077
Eco ex	0.045	0.077	0.707

(All the correlations significant at $p < 0.001$)

Source: Calculated values based on field survey

Since the values on the diagonal latent variable correlation table of Warp PLS output were higher than any of the values above or below them, in the same column the discriminant validity was established.

On the basis of reliability and validity considerations for both the reflective and formative constructs, strength of the beta coefficients, the model was found to be fit.

Table 49 .represents the estimated relationship between ecotourism experience, ecotourist satisfaction and future behavioural intention.

Table 49

Estimated relationship between ecotourism experience, ecotourist satisfaction and future behavioural intention

S. No	Hypotheses	β value	Significance: $p < 0.01$	Remarks
1.	Tang \rightarrow EcoEx	0.35	Yes	Estimated model validated
2.	Intang \rightarrow EcoEx	0.34	Yes	Estimated model validated
3.	Psych \rightarrow EcoEx	0.33	Yes	Estimated model validated
4.	Demo \rightarrow EcoEx	0.37	Yes	Estimated model validated
5.	Ecoexp \rightarrow E.sat	0.18	Yes	Estimated Model validated
7.	Ecosat \rightarrow FBI	0.35	Yes	Estimated Model validated

Source: Calculated values based on field survey

Among tangible, intangible, psychological, demographic factors, which are the four first order dimensions, it was found that demographic dimension ($\beta=0.37$) was found to have a strong say in developing ecotourism experience. Age among the five indicators used to measure demographic variables, was found to be the strongest indicator (standard regression coefficient= 0.805). The next significant contributor of ecotourism experience was tangible dimension ($\beta=0.35$) and among eight indicators, ecotourism activities was the strongest

indicator (standard regression coefficient=0.751). This was followed by Intangible dimension ($\beta=0.34$) and the strongest indicator of this dimension was scenic beauty (.794). Psychological dimension had β value of 0.33 and the strongest indicator of this dimension was enjoyment (.839).

The model has found the existence of significant relationship between ecotourism experience and ecotourist satisfaction ($\beta=0.18$) The strongest indicator contributing towards ecotourist satisfaction is the satisfaction derived from ecotourism programs at the destination.(standard regression coefficient = .805).

The model has also found the existence of significant relationship between ecotourist satisfaction and future behavioural intention ($\beta=0.35$). Among the indicators of future behavioural intention, revisit intention was the strongest (.781).

Thus age, ecotourism activities, scenic beauty and enjoyment were the indicators of demographic, tangible, intangible, psychological dimension which had influenced ecotourism experience.

4.9 Constraints faced by tourists visiting Periyar Tiger Reserve

The tourists had encountered certain problems at the destination. The constraints include overcrowding, lack of coordination among staff at the entrance/ticket counter and boat jetty, serpentine queue leading to long waiting time, restrictions on dress when the tourists opt for nature walk, lack of cleanliness and hygiene, technological constraints pertaining to communication inside the protected area and restrictions on non renewable source of energy, lack of amenities like toilets and canteens inside the protected area etc.

The current study tried to calculate mean score of the constraints faced and Garrett ranking for the constraint faced in peak and lean season

Table 50 represents the mean scores of the constraints faced and Garrett ranking for the constraints faced in peak and lean season at Periyar Tiger Reserve.

Table 50

Mean scores of the constraints faced and Garrett ranking for the constraints faced in peak and lean season

Constraints	Peak Season		Lean season	
	Mean scores	Rank	Mean scores	Rank
Overcrowding	92.01	I	79.55	VIII
Lack of coordination among staff at entrance and boat jetty	89.77	III	83.58	V
Long waiting time	90.43	II	81.12	VII
Dress restrictions for nature walk	85.54	V	82.86	VI
Entry and exit restrictions	76.83	X	80.25	IX
Age restrictions for nature walk	77.33	IX	85.09	IV
Lack of amenities like toilets, canteens	87.21	IV	86.18	II
Cleanliness and hygiene	80.30	VII	90.55	I
Non availability of accommodation facilities inside the protected area	83.21	VI	77.13	X
Lack of orientation about the insect bites.	79.26	VIII	87.24	III

Source: Calculated values based on field survey

In the peak season, problem of overcrowding had been assigned the first rank while in the lean season lack of cleanliness had been assigned the first rank,

The study tried to apply Kruskal Wallis test to find out whether there is a significant difference in the rank assigned for the problems faced by the tourists in the peak and lean season.

The calculated Kruskal Wallis test indicates that there is a significant difference in ranking of the problems faced by tourists in the peak and lean season since the calculated Kruskal Wallis value (19.20) was higher than $X^2_{0.05}=3.84$.

4.10 Suggestions given by the respondents to improve ecotourism at Periyar Tiger Reserve

Table 51 represents the suggestions given by the respondents to improve ecotourism at Periyar Tiger Reserve

Table 51
Suggestions given by the respondents to improve ecotourism at Periyar Tiger Reserve

Suggestions	Number of respondents
E- ticketing for all ecotourism activities	85 (16.25)
Better, reasonably priced packages covering more than one ecotourim activity	81 (15.48)
Better coordination among staff at PTR	83 (15.86)
Orientation on precautions for nature walk and other ecotourism activities	79 (15.10)
Better education and interpretation programs at the destination	22 (4.20)
Provision of minimum amenities like washrooms and canteens	84 (16.06)
More security measures especially in the night as movement of nocturnal animals is a threat	36 (6.88)
Better cleanliness and hygiene	21 (4.01)
Other renewable sources of power other than solar may be utilised.	32 (6.11)

Source: Field survey 2014-15

Figures in paranthesis indicate percentage to total.

Majority of the respondents (16.25 percent) have suggested for E-Ticketing facilities for all ecotourism activities and only 4.01 percent of the respondents desired to have better cleanliness and hygiene.