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Ecotourism-Strategy for Poverty Alleviation and Natural Conservation in Kashmir

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Abstract

Ecotourism generate economic benefits at local to national level and create incentives to preserve the resources. Ecotourism is an effective tool for poverty alleviation and ensuring growth with its backward and forward linkages with other economic sectors. Kashmir has a vast potential to become one of the India's best ecotourism destination and having numerous attractive and beautiful tourist spots. A balance between development and the environment should be created. Ecotourism helps in sustainable development and associated with various challenges. The study attempts to explore the potential sites of ecotourism for future development in Kashmir and would examine the correlation between ecotourism and natural conservation with regard to the perception of tourist and conservation agencies. The study is exploratory in nature but empirical tools are also applied to highlight the potential of ecotourism.

Keywords: Poverty Alleviation; Linkages; Environmental deterioration and conservation

Introduction of Ecotourism

The tourism movement evolved in 1970s. The concept of ecotourism was coined in 1981 by Hector Ceballos-Lascurain, a Mexican environmentalist. He has been involved in the conservation of rainforest areas by promoting ecological tourism and ecotourism (Ceballos Lascurain, 1993). Ecotourism has been promoted as an important conservation tool and potential to improve education on cultural habitats and improve economic conditions for host nations. Ecotourism guarantees sustainable use of environmental resources, while generating economic opportunities for the local people (Kiper T. 2013).

The agreeable definition is defined in 1989 by International Ecotourism Society as, "responsible travel to natural areas that conserves the environment and improves the well-being of local people". The foundation of ecotourism is associated with poverty alleviation and is believed to be significant for income generation and sustainability of environment. The interaction between tourists and poor local communities through ecotourism has an immense potential to enhance growth (Ahmad, 2014).

Research Methodology

Primary data was collected from tourists and conservation agencies with the help of structured questionnaires. Secondary data is collected from govt. agencies, reports, statistical reports and articles published in news papers, electronic media and websites. Most primary data was collected through interviews with the local community and local authorities.

Objectives: The proposed study would attempt to achieve the following objectives:

1. To explore the potential sites for future development of ecotourism in Kashmir.
2. To examine correlation between ecotourism and natural conservation.

Data collection process proceeded by an interplay of questionnaire and unstructured interview. Although the data collected is largely based on quantitative research techniques but face to face, unstructured interviews were also conducted simultaneously to substantiate the results obtained from questionnaire. The results were checked for reliability through Cronbach's alpha and the validity was ensured through measurement of total item correlation. The data collected through questionnaires was analyzed. Predominantly, statistical methods such as Factor analysis, Principal Component Analysis (PCA), Correlation and T-Test were used to analyze collected data.

Discussion and Findings

Ecotourism has potential to fight against global poverty. Ecotourism is accepted as a means that can satisfy local people. It provides a means of empowerment to disadvantaged groups such as many native people (including women) by opening an economic and management role for them in ecotourism (Gauthier, 1993).

Besides protection and conservation of environment, it involves empowerment and participation of the local communities as important beneficiaries of the tourist activity. Earnings from visitors are generally ploughed back into preserving and conserving the natural environs of the destination and enhancing the cultural integrity of the local people.

Kashmir is a land of numerous valleys which are very beautiful and attracts tourists throughout world. In this work, it is aimed to assess the contribution of ecotourism in alleviating poverty in Kashmir. Some various places depict the nature's beauty at its best are.

Srinagar – Heaven On Earth	This capital city is enclosed by green mountains and north west by Dal Lake.
Gulmarg – Ski Your Way	It is known as 'Meadow of Flowers' and enjoying activity of skiing in winter.
Sonamarg – Land of Gold	It is known as 'Meadow of Gold' and stunning flowers are its attractions.
Pahalgam – Allured Picturesque Views	It is surrounded by dense forests, beautiful lakes and meadows of flowers.
Anantnag – Home To Temples	Anantnag is bestowed with springs and tourist spots- Verinag and Daksum.
Nishat Garden	This garden is historically famous and known as Garden of Bliss.
Shalimar Garden	It is garden and polished stones established in 1616 by Emperor Jehangir.
Yusmarg – Sit In Tranquility	This is the top tourist place in Kashmir and Nil Nag Lake are situated there.
Vaishno Devi – Haven For Pilgrims	Vaishno Devi is a manifestation of Goddess Durga from Hindu mythology.
Patnitop	Patnitop is one of the top tourist spot and offers thrilling activities.
Amarnath – Marvel Occurences	People from all over the world indulge 'Amarnath Yatra'.
Dachigam National Park	We find indigneous species of plants and animals at Dachigam national Park.

These tourist places that one must visit strengthen and revitalize tourism industry and enlighten ecotourism. Kashmir attracts lots of tourists due to great cultural heritage, religious and historical sites. The annually holy Hindu pilgrimage traditionally culminated on the auspicious day of Shravan Purnima as per Hindu Calender depicted from 2001-2020 chanting of religious hymns and prayers.

Year	*2001*	*2003*	*2005*	*2007*	*2009*	*2011*	*2013*	*2015*	*2017*	*2019*	*2021*
No. of Pilgrims	1.91	1.70	3.88	2.96	3.81	6.21	3.54	3.50	2.60	0.95	1.13

Table 1.1: Pilgrims Visited Amarnath Shrine from 2001 to 2021 (lakhs).

Sources: Deccan Herald (DH) News Service, Srinagar, July 27, 2019, www.deccanherald.com

Report: Additional Chief Executive Officer (ACEO) of Shri Amarnathji Shrine Board, 2018

Ecotourism resulted into participation of local communities in tourism sector which has improved the socio-economic condition of people in Kashmir and helped in reduction of poverty. Tourism meets the needs local residents while protecting future opportunities. The valley of Kashmir is dotted with the places of great tourism potential. However, natural resource depletion and environmental degradation associated with tourism are often serious problems in tourism rich region of Kashmir. There is a greater need to regulate tourism, the environment and quality of life of local residents.

Year	*1955*	*1965*	*1975*	*1985*	*1995*	*2005*	*2015*
Indians	48190	35700	148320	465600	320	585700	701504
Foreign	2830	7430	19300	38020	8200	19680	25984
Total	51020	43130	167620	503620	8520	605380	736488

Table 1.2: Tourist Arrivals to Kashmir Valley since 1955.

Source: Directorate of Tourism Kashmir.

Note: - 2020 Trend not evaluated due to outbreak of Covid-19.

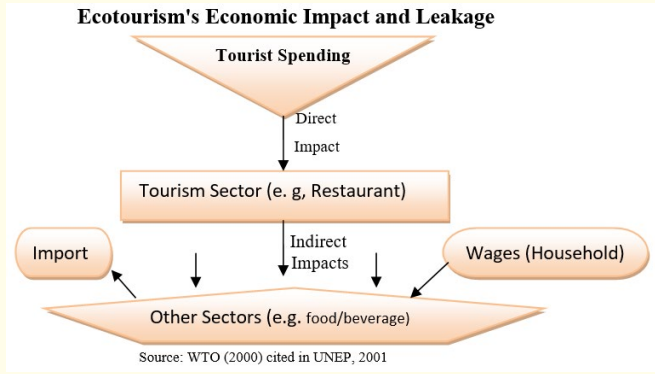
The potential ecotourism activities attract different type of tourists in Jammu and Kashmir like Forest based activities (travelling, treks and long excursions, wildlife viewing and visit to wetlands), river bound activities (includes Viewing of river borders, rafting, canoeing, fishing and boating.) and culture bound activities. Ecotourism satisfy both local people as well as conservationists. Tourism creates opportunities to diversify local economy by providing jobs and promoting cross-cultural awareness. The study reveals that tourism has not only provided supplementary income but also increased the appreciation of local culture. The following ecotourism sites have been explored that act as a Catalyst of Poverty Alleviation.

Hokersar & Dachi-gam	This wetland and national park is near to Srinagar and can be developed as a popular ecotourism site.
Dachigam Park	This national park is 22 Km from Srinagar, home of Hangul, with lush forests and fast flowing rivers.
Gulmarg WS	This Gulmarg Wildlife sanctuary has Musk Deer, black bear and leopard and boosting ecotourism.
Bangus Valley	Bangus Valley is beautiful and situated at Handwara in Kupwara district.
Sattbarran	It is located at Lolab Valley in Kupwara, Sattbarran at Kalaroos is a unique and beautiful sight.

Wayan	Wayan is a beautiful place, which is a famous picnic spot for the locals in Kupwara.

Source: - Ecotourism Development Plan for Jammu and Kashmir, 2015.

These Ecotourism sites has become a major source of income for local people either through direct employment such as managers, guides, housekeepers, and boat drivers, or from sales of foods, handicrafts, transportation or other services.



Apart from natural beauty, this region is dotted with several religious sites, places and other historical monuments which are important determinants of ecotourism development in the region. There are various determinants of ecotourism potential including physical, cultural, social and historical in this region.

Kashmir is famous for the elongated Valley through which the river Jhelum flows. The main Valley is garlanded by various small side valleys. These side valleys are dotted with transparent lakes, gushing streams, green turf, magnificent trees, mountains and cool and pleasant atmosphere (Hussain, 1998). Lidder Valley is the main attractions among the tourism destinations in and around the pleasant hill station of Pahalgam. One remarkable feature of the Lidder Valley is the presence of pleasing glaciers. The majestic Zojila pass marks the boundary from the Sind valley to the Ladakh region. Lolab Valley is another beautiful valley which is an untouched and unexplored tourist destination with dense forest ranges. Bangus Valley is also an upcoming destination which is attractive and surrounded all sides by dense forests and snow covered mountains.

Meadows are considered as an important determinant of tourism development and form a very prominent part of tourist attractions in Kashmir. These meadows attract tourists in large numbers due to its mesmerizing beauty. Some of the famous meadows in Kashmir are Gulmarg meadow, Sonmarg, Yusmarg and Daksum meadow. Kashmir is decorated by a number of big and small lakes found all along the length and breadth of the valley. Dal Lake is counted among the best and well-known tourist destinations of Kashmir. It is famous all over the world and lies in the east of Srinagar city, at the foot of Zabarwan hills, with Shankaracharya hill in its south and the Hariparbat fort on its west. Nageen Lake is separated from the large Dal Lake by a small narrow causeway. Wullar Lake is said to be the largest freshwater lake of Asia.. Manasbal lake is considered as one of the best lakes of Kashmir in terms of tourist attraction. This lake is located in Ganderbal district about 30 Km north of Srinagar city. Harwan Lake is situated at a distance of 21 km from Srinagar. Hokarsar Lake is located on the Baramulla road about 13 km from Srinagar. This Lake is surrounded by willow trees grown in abundance on its bank. Kousarnag Lake is the largest mountain lake in Kashmir. This lake is surrounded by most picturesque peaks of Pir Panjal range. Apharwat Lake is also a mountainous lake that lies near Gulmarg.

Kashmir region is gifted with a large number of rivers and streams. Jhelum River, Dudhganga River, Sindh River and the River of Veshav are the good examples. Glaciers of Kashmir Valley play a prominent role in attracting tourists. The most important glaciers are Kolahoi glacier which lies in the north western Himalayan range. Kolahoi glacier is the source of Lidder River. Thajiwas is another important glacier.

Kashmir is rich in forest wealth. It occupies about 8,128 Sq Km of forest area which is about 50.97 percent of the total forest area of J&K. District Kupwara covers largest forest area in Kashmir and has about 1703 Sq. Kms. (71%) of its area under forests followed by Baramulla district which has 2690 Sq. Kms. (59%) of its areas under forests. The presence of mountains, foothills and plains in the region abode a diverse species of flora and fauna. Some of the best-known animals found in the region are snow leopard, Common leopard, Brown bear, Hangul or Kashmiri stag, Bharal, red fox, Musk deer, langur, Himalayan black bear etc. Some birds which are found in Kashmir are Black eagle, Griffon vultures, Black and yellow grosbeak, Hobbys, Kestrels and Monal pheasants. There are several National parks and Wildlife Sanctuaries (Dachigam National Park, Gulmarg Biosphere Reserve and Overa Wildlife Sanctuary) that have been established in Kashmir for the conservation of rare species of animals (Mir, 2014).

The kings and emperors constructed numerous temples, gardens and palaces visited by both domestic as well as foreign tourist throughout the year. Some of the famous historical gardens of Kashmir Valley are: Shalimar Garden, Nishat Garden, Cheshmashahi Garden, Naseem Bagh, Harwan Garden, Achabal Garden and Tulip Garden etc. These tourist spots promote tourism which been quite successful in attracting people from all over the globe. There are several landmark temples and mosques that are more than 1000 years. Shankaracharya Temple is one of the best historical monuments situated on the top of Takht-e-Sulaiman hill, to the south-east of Srinagar city built about 2500 years ago by King Gopaditya. Pari Mahal is situated in Srinagar. The Hari Parba Fort (built by Mughal Emperor Akbar in 1590) is an ancient Mughal Fort which is situated to the western side of the Dal Lake.

The study is to analyze the correlation between Ecotourism and natural Conservation based on primary data collected from tourists and Conservation Agencies. Keeping in mind the objectives, a structured questionnaire was developed and used as an instrument to gauge the factors measuring Ecotourism and natural Conservation. For this purpose factor analysis was done to extract various constructs. In present study Spearman's and Pearson Correlation is used to study the correlation between Ecotourism and natural Conservation with regard to the perception of Tourists and Conservation agencies.

Demographics	*Category*	*Freq.*	*Percent*	*Demogr*	*Category*	*Freq*	*Percent*
Gender	Male	210	52	Age	20 – 39	342	83.8
	Female	198	48		40-59	62	15.2
	Total	408	100		60-79	4	1
					Total	408	100
Type	Tourist	378	92.6	Education	Primary school	11	2.6
					High school	28	6.8
					College	72	17.64
	Conservation Agency	30	7.4		University	297	72.8
	Total	408	100		Total	408	100
Nationality	Indian	366	89.70	Income	Below Rs. 50000	152	37.25
					Rs. 50000 – 99999	168	41.17
	Foreigner	42	10.29		Rs. 100000 -149999	48	11.76
	Total	408	100		Rs. 150000- 199999	40	9.80
					Total	408	100

Table 1.3: Demographic profile of respondents.

As shown in the table above, it is observed that the gender composition of the tourists was nearly even, male (52%) and female (48%). The large number of the respondents were tourists (92.6%) followed by conservation agency (7.4%). More than half of the respondents were Indian (89.70%) and the rest (10.29%) were foreigners. Majority of the respondents (83.8%) were of the age group of 20-39 years while only 1% of the respondents were above 59 years of age. Most of the respondents had an education till university level (72.8%) followed by the college level (17.64%), only a handful had been to primary school (2.6%). The majority of the respondents had an income between Rs. 50000 – 99999 below (41.17%).

In the current study, factor analysis was carried on two data sets i.e. Ecotourism and natural conservation to reduce the variables and to determine the underlying factors of two constructs. Moreover, it explained the dimensions associated with data variability.

Measures of Ecotourism

20 items (20 Questions in questionnaire) of ecotourism were explored retained by pilot study statistics. All the preliminary number of items (20) was subjected to factor analysis, which later got reduced to 18 items and were retained for attaining reliable results. After initial refinement and purification, 5 factors were produced by PCA.

Comprehensive Process of Factor Analysis on Ecotourism

The process of factor analysis conducted has been explained below:

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		***0.594***				
Bartlett's Test of Sphericity	Approx. Chi-Square	1952.511	Df	191	Sig.	0

Table 1.4: KMO and Bartlett's Test (Against items that measure Ecotourism).

From the above table it can be seen that the dataset understudy is suitable for Exploratory Factor Analysis, as the KMO value is 0.594. The dataset indicates that the sample is adequate and we may proceed with the Factor Analysis. For Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05. Bartlett's Test of Sphericity in the table above also indicates that our results are statistically significant. Bartlett's Test of Sphericity relates to the significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through study. Therefore, Factor Analysis can be used for the dataset. Principal Component Analysis (PCA) has been used as Extraction Method. PCA is an extraction procedure that tries to reduce the number of variables to a smaller set of variables. With the help of this method unique results may be determined. Thus, the original data may be reconstructed from the result. As this method takes the total variation among the variables, therefore, the solution generated will include as many factors as there are variables although it is unlikely that they will meet all the criteria for retention. In other words, the variables which have over 30% extracting are included to study further. PCA uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components that are interpreted as dimensions.

	ECET4	***ECET5***	***ECE6***	***ECE7***	***ECE8***	***ECE10***	***ECE11***	***ECE12***	***ECET13***	***ECET14***
Initial	1	1	1	1	1	1	1	1	1	1
Extraction	0.554	0.563	0.4476	0.411	0.534	0.383	0.675	0.519	0.563	0.694
	ECET16	***ECET17***	***ECET18***	***ECET21***	***ECET22***	***ECET23***	***ECET24***	***ECET46***	***ECET48***	***ECET57***
Initial	1	1	1	1	1	1	1	1	1	1
Extraction	0.608	0.415	0.531	0.391	0.623	0.489	0.307	0.411	0.552	0.655
Extraction Method: Principal Component Analysis										

Table 1.5: Communalities (Ecotourism).

Since there is no single variable in the table above less than 30%, all items is considered for making factors.

Component	*Initial Eigen values*			*Extraction Sums of Squared Loadings*			*Rotation Sums of Sq. Loadings*		
	Total	*% of Var.*	*Cum. %*	*Total*	*% of Var.*	*Cumulative %*	*Total*	*% of Var.*	*Cum %*
1	3.757	18.784	18.784	3.757	18.784	18.784	2.297	11.486	11.486
2	1.923	9.614	28.397	1.923	9.614	28.397	2.157	10.787	22.273
3	1.785	8.926	37.323	1.785	8.926	37.323	2.125	10.626	32.899
4	1.546	7.729	45.052	1.546	7.729	45.052	1.916	9.581	42.48
5	1.353	6.766	51.818	1.353	6.766	51.818	1.867	9.337	51.818
6	-	-							
19	0.29	1.448	98.751	0.29	1.448	98.751			
20	0.25	1.249	100	0.25	1.249	100			

Table 1.6: Total Variance Explained (Ecotourism).

As per the methodology of PCA, the total factors that will be made are 5 as there are five Eigen values greater than 1 and those 5 factors will comprise of 51.818% of the total information. Another important aspect that needs mention is the Rotated Component Matrix. While deciding how many factors one would analyze is whether a variable might relate to more than one factor. Rotation maximizes high item loadings and minimizes low item loadings, thereby producing a more interpretable and simplified solution. The rotated component matrix is one which helps to inspect the extracted factors from different angle to see if the inference from all of them points to one output. On the basis of this matrix, the factors are constructed; that is, a specific variable gets a place in a particular factor. In the present study PCA with Varimax rotation is used. Varimax is an orthogonal rotation that from the perspective of individual subjects measured on the variables, seeks a basis that most economically represents each individual—that is, each individual can be well described by a linear combination of only a dimensions. Varimax is so called because it maximizes the sum of the variances of the squared loadings (squared correlations between variables and dimensions).

	Components				
	1	*2*	*3*	*4*	*5*
ECET5	0.739				
ECET57	0.685			0.346	
ECET6	0.567				
ECET46	0.487				
ECET22		0.684		0.336	
ECET8		0.666			
ECET17		0.607			
ECET21		0.488			0.334
ECET48	0.429	0.486			
ECET13	0.345	0.409		0.384	-0.335
ECET11			0.795		
ECET23			0.627		
ECET12			0.555		
ECET10			0.489		

ECET14				0.817	
ECET4					0.729
ECET16	0.413				0.649
ECET18			0.472		0.504
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization					
a. Rotation converged in 12 iterations					

Table 1.7: Rotated Component Matrix (Ecotourism).

Principal component analysis with varimax rotation was used to factor the belief statements of the respondents. This analysis yielded five factors with Eigen values greater than 1. The factors on the basis of Rotated Component Matrix by using Varimax with Kaiser Normalization method are:

FACTOR1: ECET5, ECET6, ECET46, ECET57 explained 18.784% of the total variance.

FACTOR2: ECET8, ECET17, ECET21, ECET22 explained 9.614 % of the total variance.

FACTOR3: ECET10, ECET11, ECET12, ECET23 explained 8.926% of the total variance.

FACTOR4: ECET7, ECET14, ECET24 explained 7.729% of the total variance.

FACTOR5: ECET4, ECET16, ECET18 explained 6.766% of the total variance.

Measures of natural Conservation

Initially all 29 items were explored and retained by pilot study. But based on the initial exploratory results, preliminary number of items (29) was further reduced to 21 for attaining reliable results. After initial refinement and purification, only 5 factors were produced by Principal Component Analysis.

Comprehensive Process of Factor Analysis on natural Conservation

The process of factor analysis conducted by the researcher has been explained below.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		***0.817***				
Bartlett's Test of Sphericity	Approx. Chi-Square	5816.666	Df	406	Sig.	0

Table 1.8: KMO and Bartlett's Test (Against items that measure Ecotourism).

From the above Table it can be seen that the dataset understudy is suitable for Exploratory Factor Analysis, as the KMO value is 0.817. The dataset indicates that the sample is adequate and we may proceed with the Factor Analysis. This also gets satisfied as the Bartlett's Test of Sphericity in the table above indicates that our results are statistically significant. In case of factor analysis of natural conservation Principal Component Analysis (PCA) has been used as Extraction Method. With the help of this method unique results were determined. The variables which were extracted over 30% were included to study further.

The below table indicates that all the variables may be considered for constructing factors because all extractions are over 30%.

	ECET15	***ECET20***	***ECET26***	***ECET27***	***ECET28***	***ECET29***	***ECET30***	***ECET31***	***ECET32***	***ECET33***
Initial	1	1	1	1	1	1	1	1	1	1
Extraction	0.514	0.635	0.476	0.673	0.557	0.407	0.593	0.507	0.648	0.678
	ECET34	ECET35	ECET36	ECET37	ECET38	ECET39	ECET41	ECET42	ECET43	ECET44
Initial	1	1	1	1	1	1	1	1	1	1
Extraction	0.491	0.636	0.66	0.393	0.593	0.654	0.449	0.572	0.637	0.58
	ECET47	***ECET50***	***ECET51***	***ECET52***	***ECET53***	***ECET54***	***ECET58***	***ECET59***	***ECET60***	
Initial	1	1	1	1	1	1	1	1	1	
Extraction	0.511	0.484	0.492	0.505	0.613	0.387	0.667	0.639	0.526	
Extraction Method: Principal Component Analysis										

Table 1.9: Communalities (Natural Conservation).

Total Variance Explained (Natural Conservation).

Component	***Initial Eigen values***			***Extraction Sums of Squared Loadings***			***Rotation Sums of Squared Loadings***		
	Total	***% Variance***	***Cumulative %***	***Total***	***% of Variance***	***Cumulative %***	***Total***	***%***	***Cumulative %***
1	9.015	31.086	31.086	9.015	31.086	31.086	5.278	18.199	18.199
2	2.341	8.072	39.157	2.341	8.072	39.157	3.231	11.142	29.341
3	1.843	6.356	45.514	1.843	6.356	45.514	2.931	10.106	39.447
4	1.642	5.663	51.177	1.642	5.663	51.177	2.684	9.255	48.703
5	1.327	4.576	55.753	1.327	4.576	55.753	2.045	7.05	55.753
20									
Extraction Method: Principal Component Analysis									

Table 2.1

Since there are five Eigen values which are greater than one in table, this indicates that one may construct five factors by using PCA approach of extraction. The constructed five factors explained 56.22% of the variations as a total. On the basis of this matrix, the factors were constructed; that is, a specific variable was placed in a particular factor. In the present study PCA with Varimax rotation was used.

The Rotated Component Matrix helps us to construct factors as given bellow.

FACTOR1: ECET15, ECET20, ECET26, ECET27, ECET28, ECET29, ECET32, ECET33, ECET39

FACTOR2: ECET41, ECET51, ECET52, ECET53

FACTOR3: ECET37, ECET50, ECET58

FACTOR4: ECET30, ECET31, ECET38

FACTOR5: ECET34, ECET35

	Components				
	1	***2***	***3***	***4***	***5***
ECET32	0.723				
ECET27	0.698			0.301	
ECET15	0.682				
ECET33	0.673	0.301			0.364
ECET20	0.662				-0.404
ECET28	0.651				
ECET39	0.639	0.305	0.37		
ECET26	0.609				
ECET44	0.547	0.373		0.303	
ECET42	0.541	0.34			
ECET29	0.522				
ECET53		0.709			
ECET41		0.614			
ECET36		0.6			0.53
ECET52		0.596			
ECET51		0.533		0.3	
ECET38			0.706		
ECET30			0.652		
ECET31			0.645		
ECET60			0.506	0.396	
ECET59			0.501	0.464	-0.341
ECET47		0.434	0.445		
ECET58				0.79	
ECET50	0.322			0.522	
ECET43	0.378	0.493		0.497	
ECET37				0.452	
ECET54			0.327	0.348	
ECET35				0.302	0.665
ECET34	0.349				0.561
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization					
a. Rotation converged in 10 iterations					

Table 2.2: Rotated Component Matrix (Natural Conservation).

Reliability Analysis

The purpose of a reliability analysis is to determine how well a set of items, i.e., observed variables, go together into a single scale. Reliability analysis also reveals how strongly each item in the scale is associated with the overall scale. This is called item-total correlations.

Reliability analysis is usually based on reliability coefficient which is named as Cronbach's alpha. This coefficient has a maximum value of 1.0. Generally speaking, when a collection of items (i.e., a scale) has a Cronbach's alpha of .70 or larger; the scale is considered to be reliable. The value of this measure shows the percentage of reliability of the data. It has been proposed that Cronbach's measure α can be viewed as the expected correlation of several tests that measure the same construct. By using this definition, it is implicitly assumed that the average correlation of a set of items is an accurate estimate of the average correlation of all items that pertain to one construct. In the current study, the researcher has run a separate reliability analysis for the items related to Ecotourism and a separate reliability analysis for the items measuring natural conservation.

Reliability Analysis (For items that measure Ecotourism)

The dataset under study comprises of the reliability analysis of the items that measure "Ecotourism" and the same have been shown below. Throughout the analysis the researcher bears in mind that for a scale to be considered sufficiently reliable, the Cronbach's measure α must be greater than 0.70.

Scale and Reliability Statistics (Against items that measure Ecotourism).

No. of Items	*Mean*	*Variance*	*Std. Deviation*
20	38.64	45.393	6.737

The mean value of 20 items is 38.64 with 6.737 average distances from mean.

Reliability Coefficient (Against items that measure Ecotourism).

Total Cases	*No. of Valid Cases*	*No. of Exclude Cases*	*No. of Items*	*Cronbach's Alpha (α)*
408 (100%)	364 (-89.20%)	44 (-10.80%)	20	0.749

As α = 74.9 %, one may conclude that the study (data set) is reliable.

Item- Total Statistics (Ecotourism)

	Scale Mean if Item Deleted	*Scale Variance if Item Deleted*	*Corrected Item Total Correlation*	*Cronbach's Alpha if Item Deleted*
ECET4	36.51	42.627	0.167	0.751
ECET5	36.85	42.054	0.325	0.738
ECET6	36.92	41.954	0.33	0.738
ECET7	36.59	42.884	0.20	0.747
ECET8	36.2	41.077	0.244	0.747
ECET10	36.83	41.899	0.348	0.737
ECET11	36.99	41.911	0.301	0.74
ECET12	36.87	41.459	0.366	0.735
ECET13	36.67	41.161	0.342	0.737
ECET14	37.09	42.737	0.221	0.745
ECET16	36.44	39.96	0.356	0.735
ECET17	36.61	42.173	0.354	0.737

ECET18	36.68	42.143	0.308	0.739
ECET21	36.42	41.008	0.307	0.74
ECET22	36.26	38.129	0.497	0.721
ECET23	37.02	41.917	0.374	0.736
ECET24	36.37	41.075	0.231	0.748
ECET48	36.87	40.027	0.416	0.73
ECET57	37.15	42.58	0.306	0.74

(ECET... is the item code of the statements used in questionnaire. Please refer to Annexure).

Table shows the correlation between each item and a scale score that excludes that item (uses all the other items, but not that one). The maximum item- total correlation is of ECET22 which is 0.497 and minimum item-total correlation is of ECET4 which is 0.167. One may look for items that, if deleted, will lead to substantial increase in the scale of α.

Reliability Analysis (For items that measure Natural Conservation)

The dataset under study comprises of the reliability analysis of the items that measure "Natural Conservation" and the same have been shown below. Throughout the analysis the researcher bears in mind that for a scale to be considered sufficiently reliable, the Cronbach's measure α must be greater than 0.70.

Scale Statistics (Against that measure Natural Conservation)

No. of Items	29	Mean	47.81	Variance	137.121	Std. Deviation	11.71

The mean value of 29 items is 47.81 with of 11.710 average distances from mean.

Reliability Coefficient (Against that measure Natural Conservation)

Total Cases	*No. of Valid Cases*		*No. of Exclude Cases*		*No. of Items*	*Cronbach's Alpha (α)*
408 (-100%)	386	-94.60%	22	-5.40%	29	0.92

As α = 92 %, one may conclude that the under study data set is reliable.

Item-Total Statistics (Natural Conservation)

	Scale Mean if Item Deleted	*Scale Variance if Item Deleted*	*Corrected Item Total Correlation*	*Cronbach's Alpha if Item Deleted*
ECET15	46.17	127.889	0.511	0.918
ECET20	46.41	131.587	0.378	0.919
ECET26	46.12	126.97	0.472	0.918
ECET27	46.34	128.568	0.588	0.917
ECET28	46.21	128.238	0.604	0.916
ECET29	46.48	130.782	0.496	0.918
ECET33	46.24	127.287	0.602	0.916

ECET34	46.16	129.653	0.445	0.918
ECET35	46.08	128.301	0.503	0.918
ECET36	46.02	129.916	0.389	0.919
ECET37	46.31	130.611	0.467	0.918
ECET38	46.08	125.739	0.495	0.918
ECET39	46.39	126.853	0.663	0.916
ECET47	46.01	129.333	0.468	0.918
ECET50	46.07	127.453	0.606	0.916

(ECET... is the item code of the statements used in questionnaire. Please refer to Annexure)

Table shows the correlation between each item and a scale score that excludes that item (uses all the other items, but not that one). The maximum item-total correlation is of ECET42 which is 0.709 and minimum item-total correlation is of ECET41 which is 0.329. All other items also have positively correlation. One may look for items that, if deleted, will lead to a - substantial increase in the scale a.

Respondents: Tourist Only

The below dataset has been achieved after taking into consideration the responses of the tourists group only. The Rotated Component Matrix, helped in constructing new factors as given below:

Ecotourism - New Variables (Respondents: Tourist Only)	
Factor-1: Creating Awareness and Local Involvement.	The variable —Creating Awareness and Local Involvement‖ is the mean of the items ECET5, ECET6, ECET46 and ECET57
Factor-2: Minimizing Negative Impact on Environment	Factor -2: The variable —Minimizing Negative Impact on Environment‖ is the mean of the items ECET8, ECET17, ECET21 and ECET22
Factor-3: Mix of Tourism and natural Conservation	Factor -3: The variable — Mix of Tourism and natural Conservation‖ is the mean of the items ECET10, ECET11, ECET12 and ECET23
Factor-4: Upliftment of Local Communities	Factor – 4: The variable —Upliftment of Local Communities‖ is the mean of the items ECET7, ECET14 and ECET24
Factor-5: Responsible Travel to Natural Areas	Factor – 5: The variable —Responsible Travel to Natural Areas‖ is the mean of the items ECET4, ECET16 and ECET18
Major Factor: Ecotourism (Tourist)	The Variable —Ecotourism (Tourist)‖ is the mean of all the above new variables of Ecotourism. (i.e. Mean of Factor 1, 2 3, 4 & 5)

Natural Conservation - New Variables (Respondents: Tourist Only)

Factor-1: Efficient Planning and Proper Waste Disposal	The variable —Efficient Planning & Waste Disposal‖ is mean of ECET15, ECET20, ECET26, ECET27, ECET28, ECET29, ECET32, ECET33 and ECET39
Factor-2: Green Building Standards and Efficient use of Resources	The variable —Green Building Standards and Efficient Use of Resources is mean of ECET41, ECET51, ECET52 and ECET53
Factor-3: Creating Awareness and Proper Site Inspection	The variable —Creating Awareness and Proper Site Inspection‖ is mean of ECET37, ECET50 and ECET58

Factor-4: Ambient Air Quality Water Quality and Noise Quality	The variable —Ambient Air Quality Water Quality and Noise Quality‖ is mean of ECET30, ECET31 and ECET38
Factor-5: Recycling	The variable —Recycling‖ is mean of ECET34 and ECET35
Major Factor: Natural Conservation (Tourist)	The Variable — Conservation (Tourist) is the mean of all new variables of natural conservation. (i.e. Mean of Factor 1, 2 3, 4 & 5)

Respondents: Conservation Agency Only

The below dataset has been achieved after taking into consideration the responses of the Tourists group only. The Rotated Component Matrix, helped in constructing new factors as given below:

ECOTOURISM - NEW VARIABLES (Respondents: Conservation Agencies Only)	
Factor-1: Creating Awareness and Local Involvement	The variable —Creating Awareness and Local Involvement‖ is the mean of the items ECET5, ECET6, ECET46 and ECET57
Factor-2: Minimizing Negative Impact on Environment	Factor-2: The variable —Minimizing Negative Impact on Environment is the mean of the items ECET8, ECET17, ECET21 and ECET22
Factor-3: Mix of Tourism and natural Conservation	Factor -3: The variable —Mix of Tourism and natural Conservation is the mean of the items ECET10, ECET11, ECET12 and ECET23
Factor-4: Upliftment of Local Communities	Factor – 4: The variable —Upliftment of Local Communities‖ is the mean of the items ECET7, ECET14 and ECET24
Factor-5: Responsible Travel to Natural Areas	Factor – 5: The variable —Responsible Travel to Natural Areas‖ is the mean of the items ECET4, ECET16 and ECET18
Major Factor: Ecotourism (Conservation Agencies)	The Variable —Ecotourism (Conservation Agencies) is the mean of all the above new variables of Ecotourism. (i.e. Mean of Factor 1, 2 3, 4 & 5)

Natural Conservation - New Variables (Respondents: Conservative Agencies Only)

Factor-1: Efficient Planning and Proper Waste Disposal	The variable —Efficient Planning and Proper Waste Disposal is mean of ECET15, ECET20, ECET26, ECET27, ECET28, ECET29, ECET32, ECET33 and ECET39
Factor-2: Green Building Standards and Efficient Use of Resources	The variable —Green Building Standards and Efficient Use of Resources is mean of ECET41, ECET51, ECET52 and ECET53
Factor-3: Creating Awareness and Proper Site Inspection	The variable —Creating Awareness and Proper Site Inspection is mean of ECET37, ECET50 and ECET58
Factor-4: Ambient Air Quality Water Quality and Noise Quality	The variable —Ambient Air Quality Water Quality and Noise Quality is mean of ECET30, ECET31 and ECET38
Factor-5: Recycling	The variable —Recycling is mean of ECET34 and ECET35
Major Factor: Natural Conservation (Conservation Agencies)	The Variable —Natural Conservation (C. Agencies) is mean of all new variables of natural conservation. (i.e. Mean of Factor 1, 2 3, 4 & 5)

Normality Distribution

Assessing Normality of the data is paramount for reason that it would determine the application of various statistical measures. In order to assess normality of variables, Shapiro-Wilk & Kolmogorov-Smirnov tests are applied. Both these tests are suitable for numerical continuous or quasi-continuous variables.

Significance level is set at α=5%.

	H0: Data is normally distributed			***H1: Data is not normally distributed***		
Tests of Normality (For Tourists)	***Kolmogorov – Smirnovaa***			***Shapiro-Wilk***		
	Statistic	***Df***	***Sig.***	***Statistic***	***Df***	***Sig.***
Ecotourism	0.061	378	0.002	0.985	378	0.001
Natural Conservation	0.08	378	0	0.932	378	0
a. Lilliefors Significance Correction						

As the test statistics of both variables assessed by both tests drive p-value below the significance level, it can be concluded that data are not normally distributed. H0 is rejected for both variables.

Perception of Conservation agencies: Tests of Normality (For Tourists)

	Kolmogorov – Smirnovaa			***Shapiro-Wilk***		
	Statistic	***Df***	***Sig.***	***Statistic***	***Df***	***Sig.***
Ecotourism	0.15	30	0.083	0.958	30	0.274
Natural Conservation	0.142	30	0.127	0.936	30	0.072
a. Lilliefors Significance Correction						

As the test statistics of both variables assessed by both tests drive p-value above the significance level, it can be concluded that data is normally distributed. H0 is retained for both variables.

Thus, it may conclude that there is a positive relationship between ecotourism and natural conservation with regard to the perception of tourists arriving in Kashmir. There is also a positive relationship between ecotourism and natural conservation with regard to the perception of conservation agencies operating.

The study is conducted to determine the relationship of ecotourism and natural conservation with regards to the perceptions of tourists and conservation agencies. A total of 408 respondents were selected for the study, out of which 30 were local conservation agencies composed of government officials, NGOs and travel firms and 370 were tourists. A questionnaire is distributed measuring eco-tourism and natural conservation and the level of perception of the respondents to each, then; responses were tabulated, tested for normality and analyzed for significant results. The correlation between ecotourism and natural conservation is examined and significant and positive relationship between eco-tourism and natural conservation as perceived both by tourists and conservation agencies. Also it was found that there is no significant difference between the perception of tourists and conservation agencies with regard to the relationship between ecotourism and natural conservation. This indicates a high level of awareness of the link between these two concepts as inextricable and necessary in any touristic activity. Implications for on the conduction of tourism in Kashmir highlights a stronger local tourism policy and framework that is responsive to environmental concerns as well as strengthening awareness of both locals and tourists. Lastly, doing so has allowed us to suggest ways to strengthen the development of ecotourism in Kashmir.

Conclusion

The evolution of ecotourism provides definition of ecotourism. An attempt identified the unexplored tourist spots. The ecotourism in Kashmir, nature and culture is plentiful and gain a greater understanding of the relationship between conservation and ecotourism. Study shows that there is a significant and positive relationship between eco-tourism and natural conservation as perceived both by tourists and conservation agencies. There is no significant difference between the perception of tourists and conservation agencies with regard to the relationship between ecotourism and natural conservation. This indicates a high level of awareness. To encourage community support for conservation and the consequent protection of natural resources, a direct connection is to be ascertained between conservation, ecotourism and accrue benefit to the community from it, collective or individual.

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