

5

Exploring the Effects of Rural Tourism on Local Community Development

Outline of the Chapter

This chapter highlights the interpretation of the local community respondents towards the effect of rural tourism development. The effects are categorised into three aspects, namely economic impact, socio-cultural impact, and environmental impact. To access the accurate effects of rural tourism initiatives, the resident schedule has been subjected to reliability analysis and factor analysis of the three impacts i.e., economic, socio-cultural, and environmental has been carried out, along with hypothesis testing using appropriate tests.

5.1 Introduction

Tourism industry over the couple of decades has been an important means of improving people's quality of life and lifestyle, both in cities and villages. The effects of tourism can be both positive and negative in economic, socio-cultural, and environmental aspects. Government policies, planning, schemes, etc along with the stakeholders and local communities' involvement play a pertinent role in development of effective rural tourism initiatives in a place. A holistic and sustainable approach by developers of tourism in a place will help in curbing the negative effects of tourism

and most importantly the involvement and participation of the host communities in tourism affairs helps in achieving sustainable tourism development both in urban and rural areas ,[219]. In Indian context, due to the vast rural diversity, a niche tourism form like rural tourism has enormous prospect.

The research has been carried out in context to the effects of rural tourism on local community development in R-Bhoi district of Meghalaya. The study was carried out in the 4 Community and Rural Development (C & RD) blocks namely *Jirang*, *Umling*, *Umsning* and *Bhoirymbong* of the district. A total of 440 samples were collected from 110 villages of the district. The samples were collected with help of a primary survey with the help of a questionnaire through an in-depth interview schedule.

A pilot study was carried out of the schedule and the schedule was tested for validity and reliability, with the help of content validity [209] and Cronbach’s Alpha for reliability. The data collected for the study was analysed by using IBM SPSS (25) software.

5.2: Reliability Analysis of the Questionnaire

The questionnaire was used for the primary survey on a sample of 440 respondents. Prior to conducting the main survey, during the pilot survey, the reliability of the questionnaire was done through Cronbach Alpha. In the Cronbach Alpha analysis, the value range is between 0 to 1 and the value closer to 1, indicates greater reliability. According to Sharma [220], the approved value of Cronbach Alpha should be above 0.60. In the schedule there were 62 items, and its Cronbach Value was 0.805 (Table 5.1). Since the value were more than 0.60, which implies there is internal consistency in the scale and indicating that the questionnaire is reliable for generating data for the study.

Table 5.1: Reliability Analysis of the Questionnaire

Reliability Statistics	
Cronbach Alpha	Number of items
0.805	62

5.3: Factor Analysis of Residents Responses regarding Effects of Tourism

Prior to the construction of the questionnaire, the researcher underwent extensive reviews of tourism literature and visited some pockets of the study area to get first-hand information from the residents about the impact of rural tourism initiatives in these areas. Also, while framing the questionnaire, discussions were held with industry experts, local tourism stakeholders and academic experts.

To understand the impacts of rural tourism and subsequent development of the local rural community in the study area, three aspects were taken into consideration i.e., economic, socio-cultural, and environmental, with a statement consisting of 40 items. A five-point Likert scale was used for measuring the flexibility of the opinions of the respondents.

A multivariate statistical technique was done in SPSS (25) software called factor analysis to analyse large volumes of data and thereby reducing it into fewer data groups to make it more manageable and meaningful, [221]. Numerous tourism literatures observed that usage of factor analysis helps in reducing the data set and to determine the factors obtained from the analysis.

5.3.1 The Economic Impacts of Rural Tourism Development

The economic impacts of rural tourism on local community development comprised of 16 statements with 13 being positive impacts and the remaining 3 being negative impacts Table 5.2. All the 16 variables of the economic impact of rural tourism development had undergone a Factor analysis via Principal Component Analysis and with Varimax Rotation.

Table 5.2: Economic Impacts comprising of 16 statements in the Schedule.

Economic Impacts (EI) of Rural Tourism		Strongly agree=1, agree=2, Neutral=3, Disagree=4, Strongly Disagree=5				
		1	2	3	4	5
1.	Rural tourism in your village has provided economic benefits for the residents	38 8.6%	376 85.5%	1 0.2%	25 5.7%	0 0%
2.	Rural tourism has affected the standard of living of the villagers	29 6.6%	225 51.1%	13 3%	173 39.3%	0 0%
3.	Rural tourism has been able to stimulate the local economy	0 0%	234 53.2%	11 2.5%	193 43.9%	2 0.5%
4.	Development and maintenance of public facilities are supported due the advent of rural tourism	0 0%	184 41.8%	5 1.1%	249 56.6%	2 0.5%
5.	Due to rural tourism new cultural activities and attractions have been created	31 7%	370 84.1%	0 0%	38 8.6%	1 0.2%
6.	Rural tourism has created the demand for local handicrafts and local indigenous delicacies	84 19.1%	333 75.7%	2 0.5%	21 4.8%	0 0%
7.	Due to rural tourism the local area gets highlighted among tourist circuits	30 6.8%	358 81.4%	0 0%	52 11.8%	0 0%
8.	Rural tourism has improved the community services like health, sanitation & hygiene, security etc	1 0.2%	119 27%	25 5.7%	293 66.6%	2 0.5%
9.	Rural tourism increases the recreational facilities in your village	0 0%	303 68.9%	0 0%	128 29.1%	9 2%
10.	The growth in rural tourism has motivated the youth to involve in tourism related jobs & activities.	38 8.6%	349 79.3%	0 0%	53 12%	0 0%
11.	The scope in rural tourism has encouraged the private player's participation and investment in the rural areas.	46 10.5%	129 29.3%	0 0%	264 60%	1 0.2%
12.	Due to Rural Tourism the accessibility of the village has improved.	32 7.3%	343 78%	3 0.7%	62 14.1%	0 0%
13.	Majority of local people are earning money by leasing their land & property for tourism purpose.	27 6.1%	64 14.5%	12 2.7%	333 75.7%	4 0.9%
14.	Rural Tourism growth and development have resulted in high prices of land and property in and around the area.	21 4.8%	112 25.5%	0 0%	304 69.1%	3 0.7%
15.	The increased flow of tourists has caused price rise of daily use items & commodities for the locals	0 0%	49 11.1%	0 0%	386 87.7%	5 1.2%
16.	Tourism activity in the area is dominated by the non-natives	17 3.6%	97 22%	0 0%	178 40.5%	148 33.6%

It was found during factor analysis the factor loading of the economic factors were greater than (>)0.5. The following results are arrived at during factor analysis Table 5.3.

Table 5.3: Descriptive Statistics of Economic impacts of Rural Tourism

	Mean	Std. Deviation	N
Rural tourism in your village has provided economic benefits for the residents	2.0295	.56192	440
Rural tourism has been able to stimulate the local economy	2.9159	.99187	440
Rural tourism has affected the standard of living of the villagers	2.7500	1.05271	440
Due to rural tourism new cultural activities and attractions have been created	2.1091	.65225	440
Rural tourism has created the demand for local handicrafts and local indigenous delicacies	1.9091	.61560	440
Due to rural tourism the local area gets highlighted among tourist circuits	2.1682	.71679	440
Rural tourism increases the recreational facilities in your village	2.6432	.96756	440
The growth in rural tourism has motivated the youth to involve in tourism related jobs& activities	2.1545	.73861	440
The great scope in rural tourism has encouraged the private player's participation and investment in rural areas	3.1023	1.14585	440
Due to rural tourism the accessibility of the village has improved	2.2159	.77326	440
Majority of local people are earning money by leasing their land & property for tourism purpose	3.5068	.96402	440
Rural tourism growth and development have resulted in high prices of land and property in and around the area	3.3545	1.01995	440
The increased flow of tourists has caused price rise of daily use items & commodities for the locals	3.7886	.64271	440
Tourism activity in the area is dominated by the non-natives	3.7795	1.23319	440

To assess the suitability of the data for factor analysis a Kaiser-Meyer-Olkin (KMO) test is done. In KMO test if the measured value is greater than ($>$) 0.9 is considered marvellous, value greater than ($>$) 0.8 is considered as meritorious, value greater than ($>$) 0.7 is considered as middling, value greater than ($>$) 0.6 is considered as mediocre, value greater than ($>$) 0.5 is considered as miserable and if measured value is less than ($<$) 0.5 is considered as unacceptable i.e., the results of the factor analysis, guaranteed won't be suitable for the analysis of the data, [223]. Since the value of KMO test is 0.737 which is greater than ($>$) 0.6, hence the data set for the economic impact can be considered adequate.

Bartlett's test of sphericity is carried out prior to statistical analysis test of data reduction like factor analysis, to confirm that a data reduction technique can lessen the data in meaningful manner. A significance value less than ($<$) 0.05 interprets that the data are differing significantly from identity and are acceptable for data reduction

statistical techniques like factor analysis, [223]. Since the Bartlett's Test of Sphericity significant value is .000 which is less than (<) 0.05, hence factor analysis is recommended for the data set (Table 5.4).

Table 5.4: KMO and Bartlett's Test for Rural Tourism Economic Impacts on Local community development

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.737
Bartlett's Test of Sphericity	Approx. Chi-Square	3142.753
	Df	120
	Sig.	.000

A total of 16 items was used to assess the economic impacts of rural tourism and when factor analysis was conducted all items was found to have loaded properly as their load factor was greater than (>)0.5 Table 5.5.

Table 5.5: Communalities for Rural Tourism Economic Impacts on local community development

Communalities	Initial	Extraction
Rural tourism in your village has provided economic benefits for the residents	1.000	.713
Rural tourism has affected the standard of living of the villagers	1.000	.803
Rural tourism has been able to stimulate the local economy	1.000	.615
Development and maintenance of public facilities are supported due to advent of rural tourism	1.000	.503
Due to rural tourism new cultural activities and attractions have been created	1.000	.805
Rural tourism has created the demand for local handicrafts and local indigenous delicacies	1.000	.622
Due to rural tourism the local area gets highlighted among tourist circuits	1.000	.666
Rural tourism has improved the community services like health, sanitation & hygiene, security etc.	1.000	.523
Rural tourism increases the recreational facilities in your village	1.000	.762
The growth in rural tourism has motivated the youth to involve in tourism related jobs& activities	1.000	.558
The great scope in rural tourism has encouraged the private player's participation and investment in rural areas	1.000	.760
Due to rural tourism the accessibility of the village has improved	1.000	.639
Majority of local people are earning money by leasing their land & property for tourism purpose	1.000	.770
Rural tourism growth and development have resulted in high prices of land and property in and around the area	1.000	.885
The increased flow of tourists has caused price rise of daily use items & commodities for the locals	1.000	.583
Tourism activity in the area is dominated by the non-natives	1.000	.776

Extraction Method: Principal Component Analysis.

Table 5.6: Total Variance Explained for Rural Tourism Economic Impacts on local community development.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %	Total	% Of Variance	Cumulative %
1	4.878	30.486	30.486	4.878	30.486	30.486	4.249	26.553	26.553
2	2.073	12.956	43.442	2.073	12.956	43.442	2.169	13.555	40.108
3	1.430	8.935	52.377	1.430	8.935	52.377	1.600	9.999	50.108
4	1.401	8.754	61.131	1.401	8.754	61.131	1.414	8.835	58.943
5	1.037	6.480	67.611	1.037	6.480	67.611	1.387	8.668	67.611
6	.898	5.614	73.225						
7	.861	5.379	78.604						
8	.696	4.349	82.954						
9	.582	3.640	86.593						
10	.508	3.176	89.769						
11	.461	2.883	92.651						
12	.382	2.385	95.036						
13	.296	1.852	96.888						
14	.224	1.398	98.286						
15	.165	1.030	99.317						
16	.109	.683	100.000						

The Total Variance Explained table highlights the factors of the study with their respective Eigen values. The Eigen values (Table 5.6) draws to the conclusion the total number of factors needed for the research study to measure the economic impacts. In this study of rural economic impacts, a total number of five factors is suitable for the study. Out of the total 16 factors for rural economic impact, all 16 variables were used in the study and 5 factors were arrived at for the study to be adequate.

The difference of the factors is expressed in the Initial Eigen values and these Eigen values helps in arriving at the number of factors needed for the study. The variables in the study are standardized to a variance of 1, because correlation matrix was conducted in factor analysis. In this study since 16 variables was used for the analysis, so the total number of variances is 16. The first factor in the total variance explained table denotes the highest Eigen value along with the highest variance and likewise the value decreases in successive factors.

The two columns namely the percentage of variance and cumulative percentage highlights the percentage of total variance of each factor and growing percentage of variances formed by current and prior factors, respectively. In the table the fifth factor gives a value of 67.611%, which means the 5 factors accounts for 67.611% of the total variance.

The factor analysis extraction of the variable rural tourism economic impact has resulted in 5 factors or components (Table 5.8). The analysis has been denoted with names such as *Economic prospects and challenges* comprising of 6 items, *Patronage* comprising of 3 items, *Livelihood opportunities* comprising of 3 items, *Rural community amelioration* comprising of 2 items and *Additional attractions and infrastructure development* comprising of 2 items.

Table 5.7: Factor Load for Rural Tourism Economic Impacts on local community development with Rotated Component Matrix

Rotated Component Matrix ^a	Component				
	1	2	3	4	5
Rural tourism in your village has provided economic benefits for the residents	.116	-.107	.582	.496	-.322
Rural tourism has affected the standard of living of the villagers	.184	.033	.830	-.137	.247
Rural tourism has been able to stimulate the local economy	.584	.475	-.109	-.165	-.097
Development and maintenance of public facilities are supported due to advent of rural tourism	-.113	.520	.010	.188	.216
Due to rural tourism new cultural activities and attractions have been created	.059	-.088	.068	.119	.881
Rural tourism has created the demand for local handicrafts and local indigenous delicacies	.274	.108	-.073	.720	.108
Due to rural tourism the local area gets highlighted among tourist circuits	.076	.786	-.064	.175	-.087
Rural tourism has improved the community services like health, sanitation & hygiene, security etc	-.243	.199	.085	.603	.166
Rural tourism increases the recreational facilities in your village	.201	.743	.378	-.094	-.135
The growth in rural tourism has motivated the youth to involve in tourism related jobs& activities	.227	.362	.501	.341	-.099
The great scope in rural tourism has encouraged the private player's participation and investment in rural areas	.862	.048	.065	.104	.003
Due to rural tourism the accessibility of the village has improved	.241	.528	-.007	.132	.534
Majority of local people are earning money by leasing their land & property for tourism purpose	.864	.035	-.004	.037	.146
Rural tourism growth and development have resulted in high prices of land and property in and around the area	.932	.008	.096	.075	.032
The increased flow of tourists has caused price rise of daily use items & commodities for the locals	.696	.038	.299	-.008	.088
Tourism activity in the area is dominated by the non-natives	.845	.130	.211	-.002	-.038

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 5.8: Factors for the rural tourism economic impact on local community Development

Factor No.	Factor Name	Variable	Factor Load
1	Economic prospects and challenges	Rural tourism has been able to stimulate the local economy	.582
		The scope in rural tourism has encouraged the private player's participation and investment in the rural areas.	.830
		Majority of local people are earning money by leasing their land & property for tourism purpose.	.584
		Rural Tourism growth and development have resulted in high prices of land and property in and around the area.	.520
		The increased flow of tourists has caused price rise of daily use items & commodities for the locals	.881
		Tourism activity in the area is dominated by the non-natives.	.720
2	Patronage	Development and maintenance of public facilities are supported due to advent of rural tourism	.786
		Due to rural tourism the local area gets highlighted among tourist circuits	.603
		Rural tourism increases the recreational facilities in your village	.743
3	Livelihood opportunities	Rural tourism in your village has provided economic benefits for the residents	.501
		Rural tourism has affected the standard of living of the villagers	.862
		The growth in rural tourism has motivated the youth to involve in tourism related jobs & activities.	.534
4	Rural community amelioration	Rural tourism has created the demand for local handicrafts and local indigenous delicacies	.864
		Rural tourism has improved the community services like health, sanitation & hygiene, security etc	.932
5	Additional attractions & infrastructural development	Due to rural tourism new cultural activities and attractions have been created	.696
		Due to rural tourism the accessibility of the village has improved	.845

In the analysis, each variable or factor with a factor load greater than (>) 0.5 has been considered. The five factors obtained denotes about 67.611% of cumulative variation. The factor analysis was conducted from IBM-SPSS-25 version.

The five factors extracted through factor analysis for rural tourism economic impact on local community development are as follows: -

Economic prospects and challenges was the first factor extracted through the analysis and the items under this factor are:

- Rural tourism has been able to stimulate the local economy.

- The scope in rural tourism has encouraged the private player's participation and investment in the rural areas.
- Majority of local people are earning money by leasing their land & property for tourism purpose.
- Rural Tourism growth and development have resulted in high prices of land and property in and around the area.
- The increased flow of tourists has caused price rise of daily use items & commodities for the locals.
- Tourism activity in the area is dominated by the non-natives.

Patronage was the second factor extracted through the analysis and the items under this factor are:

- Development and maintenance of public facilities are supported due to advent of rural tourism.
- Due to rural tourism the local area gets highlighted among tourists' circuits.

Livelihood opportunities were the third factor extracted through the analysis and the items under this factor are:

- Rural tourism in your village has provided economic benefits for the residents.
- Rural tourism has affected the standard of living of the villagers.
- The growth in rural tourism has motivated the youth to involve in tourism related jobs & activities.

Rural community amelioration was the fourth factor extracted through the analysis and the items under this factor are:

- Rural tourism has created the demand for local handicrafts and local indigenous delicacies.
- Rural tourism has improved the community services like health, sanitation & hygiene, security etc.

Additional attractions & infrastructure development was the fifth factor extracted through the analysis and the items under this factor are:

- Due to rural tourism new cultural activities and attractions have been created.
- Due to rural tourism the accessibility of the village has improved.

5.3.2 The Socio-Cultural Impacts of Rural Tourism Development

The rural tourism socio-cultural impacts on local community development questionnaire comprised of 12 statements, with 7 statements being positive and the remaining 5 being negative impact (Table 5.9)

Table 5.9: Socio-cultural impacts comprising of 12 statements in the Schedule.

SOCIO CULTURAL IMPACTS (SCI)		Strongly agree=1, agree=2, Neutral=3, Disagree=4, Strongly Disagree=5				
		1	2	3	4	5
1.	Rural Tourism provides incentives to restore historical and heritage sites and buildings of the area.	0	20	2	403	15
		0%	4.5%	0.5%	91.6%	3.4%
2.	There has been more cultural exchange between tourist and local host communities	179	256	4	1	0
		40.7%	58.2%	0.9%	0.2%	0%
3.	Rural Tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	161	278	1	0	0
		36.6%	63.2%	0.2%	0%	0%
4.	Rural tourism advancements are making more habitable place to live for the local communities and for the tourist to visit	128	308	4	0	0
		29.1%	70%	0.9%	0%	0%
5.	Rural Tourism has led to more awareness towards protecting culture and heritage.	85	342	6	7	0
		19.3%	77.7%	1.4%	1.6%	0%
6.	Rural tourism has been able to empower the local women of the communities and they are participating in tourism activities actively.	115	325	0	0	0
		26.1%	73.9%	0%	0%	0%
7.	Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the tourists	44	394	0	2	0
		10%	89.5%	0%	0.5%	0%
8.	Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	1	187	0	244	8
		0.2%	42.5%	0%	55.5%	1.8%
9.	Local community prefers tourism related jobs rather than their traditional livelihood occupations.	14	204	1	220	1
		3.2%	46.4%	0.2%	50%	0.2%
10.	1. The increased flow of tourists has also resulted in anti-social behaviour such as crime, drug activity, alcoholism, gambling, Promiscuity, prostitution etc.	0	130	1	302	7
		0%	29.5%	0.2%	68.6%	1.6%
11.	Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area.	21	155	0	259	5
		4.8%	35.2%	0%	58.9%	1.1%
12.	Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner.	21	155	0	259	5
		4.8%	35.2%	0%	58.9%	1.1%

It was found during factor analysis the factor loading of the socio-cultural factors were greater than (>)0.5. The following results are arrived at during factor analysis.

Table 5.10: Descriptive statistics of Rural tourism Socio-cultural impacts

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
Rural tourism provides incentives to restore historical and heritage sites and buildings of the area	3.9386	.46603	440
There has been more cultural exchange between tourist and the local host communities	1.6068	.52060	440
Rural tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	1.6364	.48630	440
Rural tourism advancements are making more interesting place to visit to live for the local communities and for the tourist to visit	1.7182	.47019	440
Rural tourism has led to more awareness towards protecting culture and heritage	1.8523	.49920	440
Rural tourism has been able to empower the local women of the communities and are participating in tourism activities actively	1.7386	.43988	440
Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the rural tourists	1.9091	.33192	440
Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	3.1614	1.01867	440
Local community prefers tourism related jobs rather than their traditional livelihood occupations	2.9773	1.04976	440
The increased flow of tourists has also resulted in wrong behaviour such as crime, drug activity, alcoholism, gambling, promiscuity & prostitution	3.4227	.93206	440
Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area	3.1636	1.07383	440
Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner	2.6386	1.17640	440

To assess the suitability of the data for factor analysis a Kaiser-Meyer-Olkin (KMO) test is done. In KMO test if the measured value is greater than (>)0.9 is considered marvellous ,value greater than(>) 0.8 is considered as meritorious, value greater than (>)0.7 is considered as middling, value greater than(>) 0.6 is considered as mediocre, ,value greater than (>) 0.5 is considered as miserable and if measured value is less than(<) 0.5 is considered as unacceptable i.e., the results of the factor analysis, guaranteed won't be suitable for the analysis of the data , [223].Since the value of KMO test is 0.734 which is greater than (>) 0.6, hence the data set for the socio-cultural impact can be considered adequate.

Bartlett's test of sphericity is carried out prior to statistical analysis test of data reduction like factor analysis, to confirm that a data reduction technique can lessen the data in meaningful manner. A significance value less than (<) 0.05 interprets that the data are differing significantly from identity and are acceptable for data reduction statistical techniques like factor analysis , [223]. Since the Bartlett's Test of Sphericity significant value is .000 which is less than (<) 0.05, hence factor analysis is recommended for the data set (Table 5.10).

Table 5.11: KMO and Bartlett's Test for Rural Tourism Socio-cultural Impacts on Local community development

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.734
Bartlett's Test of Sphericity	Approx. Chi-Square	1804.903
	Df	66
	Sig.	.000

The Communalities table derived from factor analysis to measure the socio-cultural impacts confirms the consistency of the factors and the existence of familiar variance in the data set. A total of 12 items was used to assess the socio-cultural impacts of rural tourism and when factor analysis was conducted all the 12 items was found to have loaded properly as their load factor was greater than (>)0.5 (Table 5.12)

Table 5.12: Communalities for Rural Tourism Socio-cultural Impacts on local community development.

Communalities	Initial	Extraction
Rural tourism provides incentives to restore historical and heritage sites and buildings of the area	1.000	.758
There has been more cultural exchange between tourist and the local host communities	1.000	.664
Rural tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	1.000	.788
Rural tourism advancements are making more interesting place to visit to live for the local communities and for the tourist to visit	1.000	.668
Rural tourism has led to more awareness towards protecting culture and heritage	1.000	.683
Rural tourism has been able to empower the local women of the communities and are participating in tourism activities actively	1.000	.685
Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the rural tourists	1.000	.605
Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	1.000	.751
Local community prefers tourism related jobs rather than their traditional livelihood occupations	1.000	.590
The increased flow of tourists has also resulted in wrong behaviour such as crime, drug activity, alcoholism, gambling, promiscuity & prostitution	1.000	.687
Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area	1.000	.589
Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner	1.000	.655

Extraction Method: Principal Component Analysis.

Table 5.13: Total Variance Explained for Rural Tourism Socio-cultural Impacts on local community development.

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.982	33.184	33.184	3.982	33.184	33.184	2.789	23.246	23.246
2	1.600	13.337	46.520	1.600	13.337	46.520	2.332	19.433	42.678
3	1.417	11.810	58.331	1.417	11.810	58.331	1.807	15.059	57.738
4	1.124	9.368	67.699	1.124	9.368	67.699	1.195	9.961	67.699
5	.790	6.585	74.283						
6	.661	5.507	79.790						
7	.626	5.215	85.005						
8	.481	4.007	89.012						
9	.430	3.586	92.598						
10	.421	3.508	96.106						
11	.254	2.120	98.226						
12	.213	1.774	100.000						

The Total Variance Explained highlights the factors of the study with their respective Eigen values. The Eigen values (Table 5.12) draws to the conclusion the total number of factors needed for the research study. In this study of rural tourism socio-cultural impacts, a total number of four factors is suitable for the study. The 12 factors for rural tourism socio-cultural impacts were considered for the study as their factor load was found adequate and out of the 12 factors 4 factors were derived and were found adequate for the study.

The difference of the factors is expressed in the Initial Eigen values and these Eigen values helps in arriving at the number of factors needed for the study. The variables in the study are standardized to a variance of 1, because corelation matrix was conducted in factor analysis. In this study since 12 variables was used for the analysis, so the total number of variances is 12. The first factor in the total variance explained table denotes the highest Eigen value along with the highest variance and likewise the value decreases in successive factors.

The two columns namely the percentage of variance and cumulative percentage highlights the percentage of total variance of each factor and growing percentage of variances formed by current and prior factors, respectively. In the table the fourth factor gives a value of 67.699%, which means the 4 factors accounts for 67.699% of the total variance.

The factor analysis extraction of the variable rural tourism socio-cultural impact has resulted in 4 factors or components (Table 5.12). The analysis has been denoted with names such as *Rural Tourism Issues* comprising of 5 items, *Enriching Engagements* comprising of 3 items, *Effects of Rural Tourism* comprising of 3 items and *Preservation and Conservation* comprising of 1 item (Table 5.15).

Table 5.14: Factor Load for Rural Tourism Socio-cultural Impacts on local community development with Rotated Component Matrix

	Component			
	1	2	3	4
Rural tourism provides incentives to restore historical and heritage sites and buildings of the area	.036	-.130	-.179	.841
There has been more cultural exchange between tourist and the local host communities	.312	.689	-.006	-.303
Rural tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	.089	.878	.004	-.093
Rural tourism advancements are making more interesting place to visit to live for the local communities and for the tourist to visit	.126	.660	.212	.415
Rural tourism has led to more awareness towards protecting culture and heritage	.067	.308	.746	.166
Rural tourism has been able to empower the local women of the communities and are participating in tourism activities actively	.124	.101	.803	-.125
Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the rural tourists	.154	-.285	.658	-.258
Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	.857	-.011	.126	.028
Local community prefers tourism related jobs rather than their traditional livelihood occupations	.557	.507	.141	-.050
The increased flow of tourists has also resulted in wrong behaviour such as crime, drug activity, alcoholism, gambling, promiscuity & prostitution	.788	.198	.136	.096
Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area	.576	.373	.207	.274
Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner	.791	.108	-.005	-.133
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				

Table 5.15: Factors for the rural tourism socio-cultural impact on local community Development

Factor No.	Factor Name	Variable	Factor Load
1	Rural Tourism Issues	Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	.841
		Local community prefers tourism related jobs rather than their traditional livelihood occupations.	.689
		The increased flow of tourists has also resulted in anti-social behaviour such as crime, drug activity, alcoholism, gambling, Promiscuity, prostitution etc.	.878
		Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area.	.660
		Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner.	.746
2	Enriching Engagements	There has been more cultural exchange between tourist and local host communities	.803
		Rural Tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	.658
		Rural tourism advancements are making more habitable place to live for the local communities and for the tourist to visit	.857
3	Effects of Rural Tourism	Rural Tourism has led to more awareness towards protecting culture and heritage.	.557
		Rural tourism has been able to empower the local women of the communities and they are participating in tourism activities actively.	.788
		Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the tourists	.576
4	Preservation and Conservation	Rural Tourism provides incentives to restore historical and heritage sites and buildings of the area	.791

In the analysis, each variable or factor with a factor load greater than (>) 0.5 has been considered. The four factors obtained denotes about 67.699% of cumulative variation. The factor analysis was conducted from IBM-SPSS-25 version.

The four factors extracted through factor analysis for rural tourism socio-cultural impact on local community development are as follows: -

Rural tourism issues were the first factor extracted through the analysis and the items under this factor are:

- Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture.

- Local community prefers tourism related jobs rather than their traditional livelihood occupations.
- The increased flow of tourists has also resulted in anti-social behaviour such as crime, drug activity, alcoholism, gambling, Promiscuity, prostitution etc.
- Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area.
- Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner.

Enriching Engagements were the second factor extracted through the analysis and the items under this factor are:

- There has been more cultural exchange between tourist and local host communities.
- Rural Tourism enhances & revitalize community pride and has given a cultural identity to the place and the community.
- Rural tourism advancements are making more habitable place to live for the local communities and for the tourist to visit.

Effects of rural tourism were the third factor extracted through the analysis and the items under this factor are:

- Rural Tourism has led to more awareness towards protecting culture and heritage.
- Rural tourism has been able to empower the local women of the communities and they are participating in tourism activities actively.
- Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the tourists.

Preservation and Conservation were the fourth factor extracted through the analysis and the items under this factor are:

- Rural Tourism provides incentives to restore historical and heritage sites and buildings of the area.

5.3.3 The Environmental Impacts of Rural Tourism Development

The rural tourism environmental impacts on local community development questionnaire comprised of 12 statements, with 7 statements being positive and the remaining 5 being negative impact (Table 5.16)

Table 5.16: Environmental Impacts comprising of 12 statements in the Schedule.

ENVIRONMENTAL IMPACTS (EI)	Strongly agree=1, agree=2, Neutral=3, Disagree=4, Strongly Disagree=5				
	1	2	3	4	5
1. Rural Tourism has resulted in preserving the natural resources and landscape.	54 12.3%	349 79.3%	12 2.7%	25 5.7%	0 0%
2. Local people have understood the importance protecting their environment as it is the major attraction for the rural tourists.	88 20%	345 78.4%	0 0%	7 1.6%	0 0%
3. Rural tourism encourages the creation of parks and leisure areas for residents	1 0.2%	159 36.1%	1 0.2%	275 62.5%	4 0.9%
4. Tourism earnings has also facilitated preservation and conservation of environment.	1 0.2%	248 56.4%	1 0.2%	190 43.2%	0 0%
5. Rural tourism has enhanced the aesthetic value of the local area.	25 5.7%	392 89.1%	0 0%	23 5.2%	0 0%
6. The local community and local SHG's/NGOs are partnering to protect environment of the place.	36 8.2%	396 90%	0 0%	8 1.8%	0 0%
7. Rural Tourism has made villages to adopt renewable & energy saving technologies.	78 17.7%	247 56.1%	1 0.2%	114 25.9%	0 0%
8. Rural tourism has resulted in overcrowding in the rural area.	8 1.8%	127 28.9%	0 0%	305 69.3%	0 0%
9. The tourist flow to rural locations have resulted in increased traffic and increasing the levels of pollution in the rural area.	0 0%	90 20.5%	0 0%	349 79.3%	1 0.2%
10. The rural tourism growth coupled with major construction activity such as hotels, restaurants are damaging the landscape & affecting the ecological balance.	0 0%	72 16.4%	0 0%	365 83%	3 0.7%
11. Open spaces in the rural area are slowly getting replaced by tourism related infrastructure.	3 0.7%	205 46.6%	0 0%	232 52.7%	0 0%
12. The garbage and littering in rural area have increased due to Rural Tourism.	8 1.8%	289 65.7%	0 0%	129 29.3%	14 3.2%

It was found during factor analysis the factor loading of the environmental factors were greater than (>) 0.5. The following results are arrived at during factor analysis.

Table 5.17: Descriptive statistics of Rural tourism Environmental impacts

Descriptive Statistics	Std.		Analysis N
	Mean	Deviation	
Rural tourism has resulted in preserving the natural resources and landscapes	2.0182	.61466	440
Local people have started protecting their environment as it is the major attraction for the rural tourists	1.8318	.48568	440
Rural tourism encourages the creation of parks and leisure areas for local residents	3.2773	.97832	440
Tourism earnings has also facilitated preservation and conservation of environment	2.8636	.99408	440
Rural tourism has enhanced the local area's appearance	2.0477	.51403	440
The local community and local SHG/NGO are partnering to protect environment of the place	1.9545	.39093	440
Rural tourism has made villages to adopt renewable & energy saving technology	2.3432	1.04911	440
Rural tourism has resulted in overcrowding in the rural areas	3.3682	.95973	440
The tourists flow to rural locations have resulted in increased traffic and increasing levels of pollution in the rural area	3.5932	.81021	440
The rural tourism growth coupled with major construction activity such as hotels, restaurants is damaging the landscape & affecting the ecological balance	3.6795	.74829	440
Open spaces in the rural areas are slowly getting replaced by tourism related infrastructure	3.0477	1.01020	440
The garbage and littering in rural area have increased due to rural tourism	2.6636	1.01942	440

To assess the suitability of the data for factor analysis a Kaiser-Meyer-Olkin (KMO) test is done. In KMO test if the measured value is greater than ($>$) 0.9 is considered marvellous, value greater than ($>$) 0.8 is considered as meritorious, value greater than ($>$) 0.7 is considered as middling, value greater than ($>$) 0.6 is considered as mediocre, value greater than ($>$) 0.5 is considered as miserable and if measured value is less than ($<$) 0.5 is considered as unacceptable i.e., the results of the factor analysis, guaranteed won't be suitable for the analysis of the data, [223]. Since the value of KMO test is 0.751 which is greater than ($>$) 0.6, hence the data set for the environmental impact can be considered adequate.

Bartlett's test of sphericity is carried out prior to statistical analysis test of data reduction like factor analysis, to confirm that a data reduction technique can lessen the data in meaningful manner. A significance value less than ($<$).05 interprets that the data are differing significantly from identity and are acceptable for data reduction statistical techniques like factor analysis, [223]. Since the Bartlett's Test of Sphericity significant value is .000 which is less than ($<$) 0.05, hence factor analysis is recommended for the data set (Table 5.16).

Table 5.18: KMO and Bartlett's Test for Rural Tourism Environmental Impacts on Local community development.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.751
Bartlett's Test of Sphericity	Approx. Chi-Square	1618.780
	df	66
	Sig.	.000

The Communalities table derived from factor analysis to measure the environmental impacts confirms the consistency of the factors and the existence of familiar variance in the data set. A total of 12 items was used to assess the environmental impacts of rural tourism and when factor analysis was conducted all the 12 items was found to have loaded properly as their load factor was greater than (>) 0.5 (Table 5.19)

Table 5.19: Communalities for Rural Tourism Environmental Impacts on local community development

Communalities	Initial	Extraction
Rural tourism has resulted in preserving the natural resources and landscapes	1.000	.740
Local people have started protecting their environment as it is the major attraction for the rural tourists	1.000	.687
Rural tourism encourages the creation of parks and leisure areas for local residents	1.000	.514
Tourism earnings has also facilitated preservation and conservation of environment	1.000	.623
Rural tourism has enhanced the local area's appearance	1.000	.544
The local community and local SHG/NGO are partnering to protect environment of the place	1.000	.534
Rural tourism has made villages to adopt renewable & energy saving technology	1.000	.548
Rural tourism has resulted in overcrowding in the rural areas	1.000	.545
The tourists flow to rural locations have resulted in increased traffic and increasing levels of pollution in the rural area	1.000	.657
The rural tourism growth coupled with major construction activity such as hotels, restaurants is damaging the landscape & affecting the ecological balance	1.000	.572
Open spaces in the rural areas are slowly getting replaced by tourism related infrastructure	1.000	.598
The garbage and littering in rural area have increased due to rural tourism	1.000	.542

Extraction Method: Principal Component Analysis.

Table 5.20: Total Variance Explained for Rural Tourism Environmental Impacts on local community development.

Total Variance Explained										
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings			
	Total	% of	Cumulative	Total	% of	Cumulative	Total	% of	Cumulative	
		Variance	%		Variance	%		Variance	%	
1	3.812	31.770	31.770	3.812	31.770	31.770	3.135	26.127	26.127	
2	1.872	15.602	47.372	1.872	15.602	47.372	1.941	16.174	42.301	
3	1.262	10.514	57.886	1.262	10.514	57.886	1.870	15.585	57.886	
4	.945	7.876	65.762							
5	.865	7.211	72.973							
6	.693	5.774	78.746							
7	.545	4.542	83.288							
8	.505	4.212	87.500							
9	.494	4.115	91.615							
10	.444	3.704	95.319							
11	.312	2.603	97.922							
12	.249	2.078	100.000							

The Total Variance Explained table highlights the factors of the study with their respective Eigen values. The Eigen values (Table 5.18) draws to the conclusion the total number of factors needed for the research study. In this study of rural tourism environmental impacts, a total number of three factors is suitable for the study. Out of the 12 factors for rural tourism environmental impacts, 3 factors were derived and were found adequate for the study.

The difference of the factors is expressed in the Initial Eigen values and these Eigen values helps in arriving at the number of factors needed for the study. The variables in the study are standardized to a variance of 1, because corelation matrix was conducted in factor analysis. In this study since 12 variables was used for the analysis, so the total number of variances is 12. The first factor in the total variance explained table denotes the highest Eigen value along with the highest variance and likewise the value decreases in successive factors.

The two columns namely the percentage of variance and cumulative percentage highlights the percentage of total variance of each factor and growing percentage of variances formed by current and prior factors, respectively. In the table the third factor gives a value of 57.866%, which means the 3 factors accounts for 57.866% of the total variance.

The factor analysis extraction of the variable rural tourism environmental impact has resulted in 3 factors or components (Table 5.19). The analysis has been denoted with names such as *Sustainable challenges* comprising of 6 items, *Environmental consciousness* comprising of 2 items and *Upliftment of the Local Area* comprising of 2 items (Table 5.22).

Table 5.21: Factor Load for Challenges of Rural Tourism development with Rotated Component Matrix

	Component		
	1	2	3
Rural tourism has resulted in preserving the natural resources and landscapes	.009	.828	.233
Local people have started protecting their environment as it is the major attraction for the rural tourists	-.026	.825	.076
Rural tourism encourages the creation of parks and leisure areas for local residents	.158	.132	.644
Tourism earnings has also facilitated preservation and conservation of environment	.306	.221	.693
Rural tourism has enhanced the local area's appearance	.057	-.243	.694
The local community and local SHG/NGO are partnering to protect environment of the place	.132	.591	-.261
Rural tourism has made villages to adopt renewable & energy saving technology	.554	.000	.490
Rural tourism has resulted in overcrowding in the rural areas	.711	.086	.177
The tourists flow to rural locations have resulted in increased traffic and increasing levels of pollution in the rural area	.801	-.125	.010
The rural tourism growth coupled with major construction activity such as hotels, restaurants is damaging the landscape & affecting the ecological balance	.710	.001	.261
Open spaces in the rural areas are slowly getting replaced by tourism related infrastructure	.759	.013	.146
The garbage and littering in rural area have increased due to rural tourism	.678	.278	.066

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 5.22: Factors for the rural tourism Environmental impact on local community Development

Factor No.	Factor Name	Variable	Factor Load
1	Sustainable challenges	Rural tourism has made villages to adopt renewable & energy saving technology	.554
		Rural tourism has resulted in overcrowding in the rural areas	.711
		The tourists flow to rural locations have resulted in increased traffic and increasing levels of pollution in the rural area	.801
		The rural tourism growth coupled with major construction activity such as hotels, restaurants is damaging the landscape & affecting the ecological balance	.710
		Open spaces in the rural areas are slowly getting replaced by tourism related infrastructure	.759
		The garbage and littering in rural area have increased due to rural tourism	.678
2	Environmental consciousness	Rural tourism has resulted in preserving the natural resources and landscapes	.828
		Local people have started protecting their environment as it is the major attraction for the rural tourists	.825
		The local community and local SHG/NGO are partnering to protect environment of the place	.591
3	Upliftment of the local area	Rural tourism encourages the creation of parks and leisure areas for residents	.644
		Tourism earnings has also facilitated preservation and conservation of environment	.693
		Rural tourism has enhanced the local area's appearance	.694

In the analysis, each variable or factor with a factor load greater than (>) 0.5 has been considered. The three factors obtained denotes about 57.886% of cumulative variation. The factor analysis was conducted from IBM-SPSS-25 version.

The three factors extracted through factor analysis for rural tourism environmental impact on local community development are as follows: -

Sustainable challenges were the first factor extracted through the analysis and the items under this factor are:

- Rural Tourism has made villages to adopt renewable & energy saving technologies.
- Rural tourism has resulted in overcrowding in the rural area.
- The tourist flow to rural locations have resulted in increased traffic and increasing the levels of pollution in the rural area.
- The rural tourism growth coupled with major construction activity such as hotels, restaurants are damaging the landscape & affecting the ecological balance.
- Open spaces in the rural area are slowly getting replaced by tourism related infrastructure.
- The garbage and littering in rural area have increased due to Rural Tourism.

Environmental consciousness was the second factor extracted through the analysis and the items under this factor are:

- Rural Tourism has resulted in preserving the natural resources and landscape.
- Local people have understood the importance protecting their environment as it is the major attraction for the rural tourists.
- The local community and local SHG/NGO are partnering to protect environment of the place.

Upliftment of the Local Area was the third factor extracted through the analysis and the items under this factor are:

- Rural tourism encourages the creation of parks and leisure areas for residents.
- Tourism earnings has also facilitated preservation and conservation of environment.
- Rural tourism has enhanced the local area's appearance.

5.4: Correlation between the factors derived from factor analysis.

5.4.1: Economic Impacts

A total of five factors were derived at after factor analysis was carried out on the data set of the economic impact. The factors are namely *Economic prospects and challenges, Patronage, Livelihood opportunities, Rural community amelioration and additional attractions* and *infrastructure development*. A Pearson correlation test was

carried out to assess the correlation between the factors of the economic impacts. Table 5.23.

Table 5.23: Pearson Correlation between the factors of the economic impacts.

Pearson Correlation/ P-value	Factors	Economic gains	Rural tourism benefit	Employment opportunities	Rural community development	Additional attraction
	Economic prospects and challenges	1				
Pearson r P-value			.113* 0.017	-.245** 0.000	-.008 0.861	.028 0.564
Pearson r P-value	Patronage	0.113* 0.017	1	.287** 0.000	.258** 0.000	.248** 0.000
Pearson r P-value	Livelihood opportunities	-.245** 0.000	.287** 0.000	1	.219** 0.000	.148** 0.002
Pearson r P-value	Rural community amelioration	-0.008 0.861	0.258** 0.000	0.219** 0.000	1	0.274** 0.000
Pearson r P-value	Additional attraction	0.028 0.564	0.248** 0.000	0.148** 0.002	0.274** 0.000	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the Table 5.23, the following inferences can be arrived at:

- The factor *economic prospects and challenges* are positively correlated with the factor *rural community amelioration* and the p-value being at 0.017, hence it is statistically significant.
- The factor *economic prospects and challenges* are negatively correlated with the factor *livelihood opportunities* and the p-value being at 0.000, hence it is statistically significant.
- The factor *Patronage* is positively correlated with the factor *livelihood opportunities* and the p-value being at 0.000, hence it is statistically significant.
- The factor *Patronage* is positively correlated with the factor *rural community amelioration* and the p-value being at 0.000, hence it is statistically significant.
- The factor *Patronage* is positively correlated with the factor *additional attraction and infrastructure development* and the p-value being at 0.000, hence it is statistically significant.
- The factor *livelihood opportunities* are positively correlated with the factor *rural community amelioration* and the p-value being at 0.000, hence it is statistically significant.

- The factor *livelihood opportunities* are positively correlated with the factor *additional attraction and infrastructure development* and the p-value being at 0.002, hence it is statistically significant.
- The factor *rural community amelioration* is positively correlated with the factor *additional attraction and infrastructure development* and the p-value being at 0.000, hence it is statistically significant.

5.4.2: Socio-Cultural Impacts

A total of four factors were derived at after factor analysis was carried out on the data set of the socio-cultural impact. The factors are namely *rural tourism issues*, *enriching engagement*, *effects of rural tourism* and *preservation and conservation*. A Pearson correlation test was carried out to assess the correlation between the factors of the socio-cultural impacts. Table 5.24

Table 5.24: Pearson Correlation between the factors of the socio-cultural impacts.

Pearson Correlation/ P-value	Factors	Rural Tourism Issues	Enriching Engagement	Effects of Rural Tourism	of Preservation and Conservation
Pearson r P-value	Rural Tourism Issues	1	-.486 ^{xx} 0.000	-.307 ^{xx} 0.000	.009 0.855
Pearson r P-value	Enriching Engagement	-.486 ^{xx} 0.000	1	.215 ^{xx} 0.000	-.096 ^x 0.044
Pearson r P-value	Effects of Rural Tourism	-.307 ^{xx} 0.000	.215 ^{xx} 0.000	1	-.178 ^{xx} 0.000
Pearson r P-value	Preservation and Conservation	.009 0.855	-.096 ^x 0.044	-.178 ^{xx} 0.000	1

*. Correlation is significant at the 0.05 level (2-tailed).

**.. Correlation is significant at the 0.01 level (2-tailed).

From the Table 5.24, the following inferences can be arrived at:

- The factor *rural tourism issues* are negatively correlated with the factor *enriching engagement* and the p-value being at 0.000, hence it is statistically significant.
- The factor *rural tourism issues* are negatively correlated with the factor *effects of rural tourism* and the p-value being at 0.000, hence it is statistically significant.
- The factor *enriching engagement* are positively correlated with the factor *effects of rural tourism* and the p-value being at 0.000, hence it is statistically significant.
- The factor *enriching engagement* are negatively correlated with the factor *preservation and conservation* and the p-value being at 0.044, hence it is

statistically significant.

- The factor *effects of rural tourism* are negatively correlated with the factor *preservation and conservation* and the p-value being at 0.000, hence it is statistically significant.

5.4.3: Environmental Impacts

A total of three factors were derived at after factor analysis was carried out on the data set of the environmental impacts. The factors are namely *sustainable challenges*, *environmental consciousness* and *upliftment of local area*. A Pearson correlation test was carried out to assess the correlation between the factors of the socio-cultural impacts. Table 5.25.

Table 5.25: Pearson Correlation between the factors of the socio-cultural impacts.

Pearson Correlation/ P-value	Factors	Environmental issues	Protection of natural resources	Upliftment of local area
Pearson r P-value	sustainable challenges	1	-.132 ^{xx} 0.006	-.318 ^{xx} 0.000
Pearson r P-value	environmental consciousness	-.132 ^{xx} 0.006	1	.174 ^{xx} 0.000
Pearson r P-value	Upliftment of local area	-.318 ^{xx} 0.000	.174 ^{xx} 0.000	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the Table 5.25, the following inferences can be arrived at:

- The factor *sustainable challenges* are negatively correlated with the factor *environmental consciousness* and the p-value being at 0.006, hence it is statistically significant.
- The factor *sustainable challenges* are negatively correlated with the factor *upliftment of local area* and the p-value being at 0.000, hence it is statistically significant.
- The factor *environmental consciousness* is positively correlated with the factor *upliftment of local area* and the p-value being at 0.000, hence it is statistically significant.

5.5: Normality test for the respondent's schedule.

In statistical analysis, it is imperative for data to be tested for normality as hypothesis assessment is generally based on assumption of normality [215];[221]. To carry out

several statistical tests, the test for data normality is essential. Though there are several methods to test data normality, most frequently used methods are Shapiro-Wilk and Kolmogorov- Smirnov tests for smaller data sets [224]. The theory of null hypothesis is used in Shapiro-Wilk test and confirms the data set is represented from normally distributed population [225]. When p-value is less than 0.05, it means data set represented is not from normally distributed population and null hypothesis is rejected, whereas when the p-value is greater than 0.05 the null hypothesis is accepted and the data is from normally distributed population.

Table 5.26: Tests of Normality (Kolmogorov-Smirnov and Shapiro-Wilk) for Respondents Schedule

Tests of Normality	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Rural tourism in your village has provided economic benefits for the residents	.462	439	.000	.481	439	.000
Rural tourism has affected the standard of living of the villagers	.340	439	.000	.738	439	.000
Rural tourism has been able to stimulate the local economy	.355	439	.000	.662	439	.000
Development and maintenance of public facilities are supported due to advent of rural tourism	.373	439	.000	.649	439	.000
Due to rural tourism new cultural activities and attractions have been created	.478	439	.000	.502	439	.000
Rural tourism has created the demand for local handicrafts and local indigenous delicacies	.387	439	.000	.603	439	.000
Due to rural tourism the local area gets highlighted among tourist circuits	.475	439	.000	.540	439	.000
Rural tourism has improved the community services like health, sanitation & hygiene, security etc	.418	439	.000	.637	439	.000
Rural tourism increases the recreational facilities in your village	.436	439	.000	.611	439	.000
The growth in rural tourism has motivated the youth to involve in tourism related jobs& activities	.463	439	.000	.571	439	.000
The great scope in rural tourism has encouraged the private player's participation and investment in rural areas	.385	439	.000	.704	439	.000
Due to rural tourism the accessibility of the village has improved	.463	439	.000	.586	439	.000
Majority of local people are earning money by leasing their land & property for tourism purpose	.462	439	.000	.582	439	.000
Rural tourism growth and development have resulted in high prices of land and property in and around the area	.435	439	.000	.637	439	.000
The increased flow of tourists has caused price rise of daily use items & commodities for the locals	.519	439	.000	.400	439	.000
Tourism activity in the area is dominated by the non-natives	.312	439	.000	.792	439	.000
Rural tourism provides incentives to restore historical and heritage sites and buildings of the area	.502	439	.000	.348	439	.000

There has been more cultural exchange between tourist and the local host communities	.371	439	.000	.662	439	.000
Rural tourism enhances & revitalize community pride and has given a cultural identity to the place and the community	.406	439	.000	.623	439	.000
Rural tourism advancements are making more interesting place to visit to live for the local communities and for the tourist to visit	.434	439	.000	.612	439	.000
Rural tourism has led to more awareness towards protecting culture and heritage	.429	439	.000	.581	439	.000
Rural tourism has been able to empower the local women of the communities and are participating in tourism activities actively	.462	439	.000	.548	439	.000
Rural tourism has given an opportunity to the local communities to showcase their traditional indigenous delicacies cooked in traditional way to the rural tourists	.508	439	.000	.373	439	.000
Increased rural tourism in the area has led to negative effect on the rural lifestyle and culture	.367	439	.000	.676	439	.000
Local community prefers tourism related jobs rather than their traditional livelihood occupations	.337	439	.000	.699	439	.000
The increased flow of tourists has also resulted in wrong behaviour such as crime, drug activity, alcoholism, gambling, promiscuity & prostitution	.434	439	.000	.618	439	.000
Traditional village houses have been replaced by modern houses due to the boom of rural tourism in your area	.381	439	.000	.707	439	.000
Sometimes tourist visiting the rural locations does not respect the rural culture and behave in undesirable manner	.368	439	.000	.784	439	.000
Rural tourism has resulted in preserving the natural resources and landscapes	.428	439	.000	.586	439	.000
Local people have started protecting their environment as it is the major attraction for the rural tourists	.435	439	.000	.550	439	.000
Rural tourism encourages the creation of parks and leisure areas for local residents	.405	439	.000	.638	439	.000
Tourism earnings has also facilitated preservation and conservation of environment	.374	439	.000	.639	439	.000
Rural tourism has enhanced the local area's appearance	.484	439	.000	.403	439	.000
The local community and local SHG/NGO are partnering to protect environment of the place	.471	439	.000	.374	439	.000
Rural tourism has made villages to adopt renewable & energy saving technology	.367	439	.000	.752	439	.000
Rural tourism has resulted in overcrowding in the rural areas	.438	439	.000	.608	439	.000
The tourists flow to rural locations have resulted in increased traffic and increasing levels of pollution in the rural area	.487	439	.000	.505	439	.000
The rural tourism growth coupled with major construction activity such as hotels, restaurants is damaging the landscape & affecting the ecological balance	.504	439	.000	.464	439	.000
Open spaces in the rural areas are slowly getting replaced by tourism related infrastructure	.354	439	.000	.653	439	.000
The garbage and littering in rural area have increased due to rural tourism	.418	439	.000	.673	439	.000

The implementation of government rural tourism schemes has resulted in improvement of your rural area through improvement in infrastructure	.482	439	.000	.541	439	.000
The homestay scheme in your rural area/village has complemented the rural tourism by providing affordable accommodation with minimum standards of cleanliness, sanitation, quality food and is based on indigenous lifestyles	.473	439	.000	.264	439	.000
The local people of your area involved in rural tourism activities are professionally qualified or trained in Hunar se Rozgar etc	.335	439	.000	.677	439	.000
The bureaucrats, tourism department etc involve the local community in decision making of rural tourism initiatives	.470	439	.000	.562	439	.000
The gram panchayat/NGO in your rural area take rural tourism decisions seriously & monitor the impacts of rural tourism	.486	439	.000	.458	439	.000
The local community involved in tourism activity in your rural area can communicate (Hindi/English) effectively with tourists	.502	439	.000	.344	439	.000
Your rural area has got metalled roads with good transport connectivity	.378	439	.000	.705	439	.000
The tourism development activities in your village are receiving continuous financial support and technical support from the Govt. agencies	.483	439	.000	.515	439	.000
Rural tourism activities are an alternative livelihood for the local agrarian folks	.466	439	.000	.505	439	.000
The migration of people from the village to nearby towns and cities has been checked by the advent of rural tourism	.407	439	.000	.393	439	.000
Marginalised community members especially ladies are getting empowered by getting involved in rural tourism activities	.457	439	.000	.543	439	.000
The rural tourism has stimulated demand for locally produce handicraft and handloom products	.408	439	.000	.534	439	.000
The rural tourism in your village is not viable as the input of money to set up tourism related infrastructure at a remote location in comparison to flow of tourists	.293	439	.000	.680	439	.000
To get a reasonable business, the rural tourism stakeholders in your village have got the support of governmental/international/national tourism bodies to maintain a constant demand of visitors	.375	439	.000	.713	439	.000
The indigenous rural tourism product in your village has got great diversity and products have been designed for various market segments	.372	439	.000	.679	439	.000
The gram panchayat/cooperative systems/SHG/NGO's carries out studies of residents, tourist and other stakeholders to understand their perception and promote their understanding as well as to retain the core rural product	.509	439	.000	.412	439	.000
Your village or rural area has a visitor or tourism information centre	.445	439	.000	.463	439	.000
The locals involved in tourism in your village have formed alliances with tourism industry stakeholders to attract tourists to their rural areas	.390	439	.000	.584	439	.000

The village authority in your village/rural area promotes local fair & festivals to attract tourists	.468	439	.000	.519	439	.000
Rural tourism in your rural area is community based in approach, rather than benefitting few individuals	.500	439	.000	.272	439	.000
The locals involved in tourism of your rural area emphasize more on providing authentic & distinct experience to tourists and not builds a non-natural environment	.485	439	.000	.192	439	.000
Government provides loans, taxation benefit & subsidies to the rural folks who want to involve in small businesses in tourism at rural level	.464	439	.000	.561	439	.000

In the table 5.26, Kolmogorov-Smirnov and Shapiro-Wilk data normality test was conducted on the schedule. The data set comprising of economic, socio-cultural, environmental and challenges aspects represent the p-value is less than 0.05% level of significance which sums up that data collected from 110 villages of the four blocks of Ri-Bhoi district is not normally distributed. Thus, the data set is needed to be tested through non-parametric test. Non-parametric test are done in two conditions namely when the data set is not validated to carry out the parametric test and when the data is measured in nominal and ordinal scales [215].

Summary

The chapter identified the impacts of the rural tourism development from the perspective of the local community with respect to economic, socio-cultural, and environmental impacts. The reliability score at Cronbach Alpha is at 0.805, which is a good reliability in context for a multiple item scale. To measure the impacts of rural tourism initiatives in the study area of Ri-Bhoi district of Meghalaya, factor analysis on the resident schedule with 36 items on a 5 to 1 Likert scale was carried out. The economic impacts comprising of 16 items were clubbed to 5 factors. The socio-cultural impact with 12 items were clubbed to 4 factors and the environmental impacts with 12 items were clubbed to 3 factors. A Kolmogorov- Smirnov and a Shapiro- Wilk normality test was carried out on the resident schedule so that hypothesis testing could be carried on the data set. Since the normality test value for p was less than 0.05 indicating that the data is not normally distributed.