International Journal of Advanced Multidisciplinary Research
ISSN: 2393-8870
www.ijarm.com
(A Peer Reviewed, Referred, Indexed and Open Access Journal)
DOI: 10.22192/ijamr Volume 11, Issue 1 -2024

Research Article

DOI: http://dx.doi.org/10.22192/ijamr.2024.11.01.006

# Exploring attitude, approach and adaptability of different socio-demographic variables for eco-tourism development in Kawar lake wetland region, Bihar, India

**Arti Kumari**
Department of Geography, University of Allahabad, University road, Old Katra, Prayagraj- 211002, U.P. (India)
Phone- 8969419556
*E-Mail: Arti.Archie@gmail.Com*

## Abstract

Wetland Eco-tourism has become an epitome for the community based tourism development in many countries and regarding that the attitude, approach and adaptability of the residents must be explored. This study is structured to explore the attitude, approach and adaptability of the residents. In this study 200 samples were collected from three villages Sakra (124), Rajaor (46)inGarhpura block and Deora (30), in Naoakothi block of Begusarai and to analyse significant differences among different socio-demographic variables t-test, anova and post-hoc tests were conducted. The result shows that residents have positive approach towards tourism development and are aware of importance of tourist's site, female had better approach towards tourism development than male. Residents from different community have preference for tourism development but general category preferred agriculture over other economic activities while SC/ST category preferred fishing. Residents also had positive approach towards adaptability and participation in different tourism infrastructure development-related activities. The result may be beneficial while making an integrated planning for tourism development involving community. The findings may help the planner to engage different socio-demographic variables in tourism activity depending upon their preferences of the activity.

**Keywords**

Community, employment, conservation, participation, development.

## 1. Introduction

Tourism now accounts for 10.4% of the global GDP and employed about 10% of the population in 2018 (WTTC, 2019). Besides the fact that tourism brings development and conservation of the environment it also promotes health, community participation, and education. The most conducive tourism from current perspective is eco-tourism, which is a form of tourism in natural settings, away from urban areas, and in unspoiled locations (Wall, 1997; Ryan, 2012). It has the appearance (in concert with best practices) of being environmentally and socio-culturally

sustainable, preferably in a way that enhances the natural and cultural resource base of the destination (Weaver, 2001). Ecotourism has profound effects on economic development, the maintenance of associated cultures, and the conservation of natural resources (Surendran & Sekhar, 2011). One such eco-tourism opportunity is provided by the naturally or artificially formed water within a depth of six meters, popularly known as wetland, a unique eco-system that delivers ecological and economic values (Vincy et al., 2012). Wetland is a direct source of food, fuel, building materials, and livelihood opportunities like agriculture, livestock, and fishing for the local people, and some wetlands indirectly act as an eco-tourism destination wetland park, allowing tourists to enjoy freshwater recreation, adventures, and cultural activities (Keenan et.al.,2019). Wetlands, on a global scale, have offered significant opportunitiesfor tourism and recreation, providing economicbenefits to the governments, the tourism industry, and thelocal communities, and the income has been used for their conservation (Ramsar and UNWTO, 2012). However, the utilisation of wetland for cultural services has more advantages than most of the consumptive uses- like agriculture, poaching of migratory birds, and sand and clay harvesting because eco-tourism helps in maintaining environmental integrity while at the same time improving existing social and cultural manifestations for community livelihood (Jones,2007; Baker, 2008).

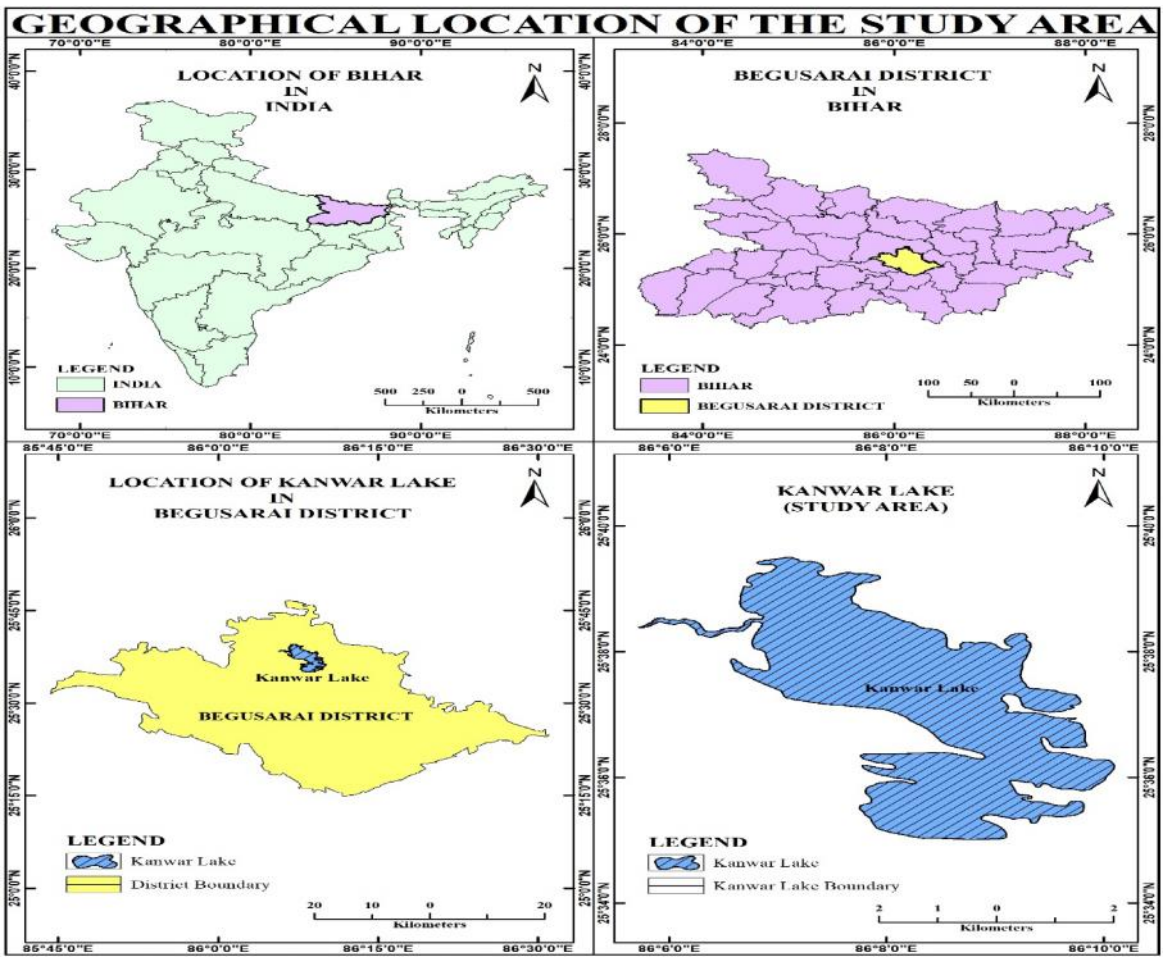
Interest in wetland tourism has grown recently, especially in Asian and African countries, as these areas are visited by millions of tourists annually (Cheung, 2008). Moreover, the ecotourism practiced here generates balance between conservation and local livelihood opportunities. (Lin et al., 2019). These wetlands have brought revolutionary changes to the concept of eco-tourism itself by incorporating man-nature-based sustainable tourism like pro-poor tourism, rural and community- based tourism etc. (Simpsons, 2008; Ashley et al., 2002,; Fernandez et al., 2015,; Campbell, 1999). However, the observation of a few remotely located wetlands of much larger dimensions suggests that eco-tourism is only an ancillary activity, while it is prioritised for the direct utilization of its resources. Excessive dependency of communities on the wetlands for their livelihood is leading to problems like overexploitation of resources, degradation, bio-diversity loss, increasing pollution, and ultimately the loss of a rich natural heritage (Macharia et al., 2011). One such wetland complex located in the underdeveloped region of India and facing similar problems is the Kawar wetland (*Kabar taal*) in Begusarai District of Bihar. The struggle for livelihood opportunities has led to excessive direct dependency on the resources of the lake and it continues to be exploited for fodder fuel, fish, and reclamation of land for agricultural purposes (Rohitsawa and Choudhary, 2013). The development and promotion of eco-tourism can generate livelihood opportunities, thus paving a way for poverty eradication along with management and utilisation of Kawar wetland resources. It will also facilitate the socio-economic development and ecological conservation of the lake. Therefore, tourism development is for finding the balance between community, livelihood and ecology. So this study tries to: i) identify the differences in the approach towards tourism development across different socio-demographic population groups around Kawar Lake. ii) to analyse the willingness of the residents to participate in different tourism infrastructure development-related activities in the study area. iii) to analyse the overview of different socio-demographic groups for the preservation and conservation of the lake.

## 2. Material and Method

### 2.1. Study area

Kawar Lake is located at the coordinates of 25° 35’ N latitude and 86° 10’E longitude. It is a geomorphic feature lying in the course of the middle Ganga Plain in the Begusarai District of Bihar, whose 10% of the geographical land is covered by wetlands (National Wetland Atlas, India, 2011). It is the largest freshwater oxbow lake in Asia, formed by the channel of Burhi Gandak (Sharma, U.P., 1993). In the year 2020, it was accorded with the status of the Ramsar site.

The Kawar Wetland complex spans six blocks of Begusarai District and one block of Samastipur District (namely Cheria Bariarpur, Naoakothi, Bakhri, Garhpura, Chhorahi, khubadanpur, and Hasanpur). The wetland complex is located in a rural setting, and it is surrounded by 23 villages, 10 of which are located within the sanctuary boundary, with a population of several thousand and the people undertaking land uses that have the potential to affect water quality in the lake. (Kawar Lake, Wetland International, 2016). The narrow temperature variation throughout the year helps support fish life in the wetland. A study conducted by Ashok Ghosh, a scientist and incumbent chairman of the Bihar State Pollution Control Board, found that the total area of the lake was 6784 hectares in the year 1984 which shrank to 6043 hectares in 2002 and by 2012, the lake was a mere 2,032 hectares in area (Prakash and Pandey, 2018). Efforts made by the pool of scientists drew the attention of the government, thereafter a part of Kawar, extending in an area of about 6,311.63 ha, was declared a protected zone in 1986 under section 37 of the Wildlife (Protection) Act, 1972, and, subsequently, a bird sanctuary, in 1989 renaming it as *Kabar Jheel Pakshi Vihar* Kabartal (umar& pandey, 2017). This wetland is also identified animportant bird area (IBA) (Bird Life International, 2005). In the year 2020, this lake was notified as a Ramsar site,making it the first Ramsar site of Bihar. The Department of Environment and Forest, Govt. of India, selected this lake as one of the 16 identified lakes of the country for its conservation, management, and development, mainly due to its greater and enormous productive potentialities for attracting numerous migratory and non-migratory birds from the remotest places of the country and abroad, including beyond the Himalayas (Siberia). However, currently, there is no systematic development of eco-tourism.




**Map 1. Locational map of study area**

## 2.2. Methodology

Simple random sampling was applied to determine the true probability of the sample size. Before the survey an overview of the study area was done. The researcher has prior knowledge of the study area as she has made her study in the Kawar Lake region as a part of her Ph.D. work. Based on prior acquaintance, the sample size was determined using the confidence interval formula. This formula is used if we are focussing on some nominally measured question in the survey (Burns et al., 2017).Since the questionnaire mainly consisted of dichotomous variables, the size of the population i.e., N was not taken into account. Instead, we have been calculating the sample error and confidence interval with an acceptable margin of error of about 5%. Using the confidence interval formula, 196* samples were obtained, which were rounded to 200. The survey was primarily conducted in three villages located at the south-eastern corner of the lake.

Sakra and Rajaor, with the total population of 1451 and 6075, respectively, are located in the Garhpura block of Begusarai, and Deora, with a total population of 2262, is located in Naoakothi. The basis of their selection was agglomeration of different factors like tourist sites, transport route, and heterogeneous socio-demographic (especially caste-based structure) characteristics which facilitated proper data collection. Based on the proportion of the population, 124, 46 and 30 respondents were selected from Rajour, Deora, and Sakra, respectively.

The questionnaire was divided into four sections. The first section consisted of the socio-demographic profile of the selected samples from three villages, like gender, age, earnings, community, and education. In the second section, questions were related to the overview for the tourism development as can be seen in Table 1.

The section was basically related to probing into their preferences of economic activities in the region (multiple choice), their opinion regarding the development of tourism in the region (dichotomous yes/no), and their acquaintance and familiarity with the sites (open ended).The third section was related to exploring the approach of the residents towards the development of the tourism infrastructure, and their willingness to participate in revenue-generating tourism-related activities (dichotomous and multiple choice). In the fourth section, questions were related to the preservation and conservation of the lake, which consisted of questions like their attitude towards the preservation and conservation of the lake (dichotomous) and hindrances to its development (multiple choice). T-test, anova, and post-hoc test were conducted to find out the differences in the opinions of respondents regarding tourism development across varied socio-demographic determinants (gender, age, education, earnings, and community).

The following formula was used to determine sample size

$$n=z^2 (pq)/e^2$$

$$*n=1.96^2 (85*15)/5^2= 195.8$$

n=sample size, z indicates standard error associated with chosen level (e.g. 1.96 for 95% confidence level),

p = estimated % in the population, q= 100-p, e is the acceptable margin of error

**Table 1. Tourism: Infrastructural Development, and conservation**

| Tour criteria | Description | Questions asked during the survey | Types of responses |
|---|---|---|---|
| Overview of tourism development | Attitude of the people towards tourism development | 1. Which activities do you prefer here? | Multiple choices (agriculture, fishing, tourism, and others) |
| | | 2. Do you want tourism to be developed in this region? | Dichotomous (Yes/No) |
| | | 3. Which sites are u familiar with? | Open ended |
| | | 4. What is the importance of that site? | Open ended |
| Tourism infrastructure | Approach and adaptability to gainfully involve in infrastructural development facilities | 1.Given an opportunity, would you like to provide a homestay to the tourists (with the payment)? | Dichotomous (Yes/No) |
| | | 2. Given an opportunity, would you like to provide food to the tourists (with payment)? | Dichotomous (Yes/No) |
| | | 3.If given the opportunity, to get engaged in the tourism program which activity would you prefer? | Multiple choice |
| | | 4. Are you willing to participate in the government-sponsored skill development program? | Dichotomous (Yes/No) |
| Protection and conservation | Willingness and attitude of the people towards conservation and protection of the lake | 1.Is the asset worth conserving as a representative example of the community's heritage? | Dichotomous (Yes/No) |
| | | 2.What are the major hindrances in the growth of the site as a tourism destination? | Multiple choice |
| | | 3.Would you like to participate in the preservation, conservation, and management of the lake? | Dichotomous (Yes/No) |

Source: Paul & Nagendra, 2017

## 3. Results and Discussion

### 3.1. Socio-Demographic profile of visitors

In the present study, the number of male(n=113, 56.2%) was higher than number of females(table-2). Most respondents were in the age group of 25 to 50 years, thereafter below 25 years, (n=50) respondents were above 50 years of age. The maximum number of respondents had an income of about Rs10000 to 20000(n=62, 30.8%) and they largely derived their livelihood from the lake- either by fishing, agriculture, or other small shops in the village. The respondents were primarily high school pass and fewer number of respondents had higher educational qualification, which can be ascribed to the rural location of the lake. Among the surveyed communities the majority of respondents were from theSC/ST and OBC communities, as can be seen in Table 2.

**Table 2. Socio-demographic characteristic**

| Socio-demographic characteristic | Number(n) | Percentage |
|---|---|---|
| **Gender** | | |
| Male | 113 | 56.2 |
| Female | 87 | 43.5 |
| **Age** | | |
| Below 25 years | 61 | 30.3 |
| 25-50 years | 89 | 44.3 |
| Above 50 | 50 | 24.9 |
| **Earning** | | |
| Less than 10000 | 60 | 29.9 |
| 10000-20000 | 62 | 30.8 |
| 20000-30000 | 50 | 24.9 |
| Above 30000 | 28 | 13.9 |
| **Education** | | |
| Illiterate | 31 | 15.4 |
| High school | 58 | 28.5 |
| 12 th | 48 | 23.9 |
| Graduate | 47 | 23.4 |
| Higher education | 16 | 8.0 |
| **Community** | | |
| General | 63 | 31.3 |
| O.B.C | 65 | 32.3 |
| SC/ST | 72 | 35.8 |

### 3.2. Attitude of the people towards tourism development

#### 3.2.1. Occupation preferred

The first question that was asked was related to the preferred occupation at the destination. The highly preferred occupation was fishing for males (35%) and tourism for females (28%). In ‘any other activity’ neither males (51%) nor females (46%) were interested in getting engaged in it. Based on income, highly preferred occupation was ‘any other activities’ like business, local shops etc. Respondents above 50 years (38%) old have high preference for agriculture activities. Younger respondents below 25 years of age had tourism (38%) as a preferred occupation in the region, ‘any other activities’ were least preferred

by the young respondents; 38% of the middle-aged respondents had fishing as the least preferred economic activity, while respondents above 50 years old (31%) had tourism as the least preferred economic activity. In terms of earning, respondents with theleast income (below Rs 10000) highly preferred fishing activity (37%), while tourism was the most preferred occupation for respondents with incomes Rs. 10000-20000 (39%) and those in the higher income group (34%).The respondents from all age groups were not at all interested in 'any other activities'.

On average, respondents from different educational background unanimously chose tourism as a preferred economic activity. The least preferred activity was fishing for high school (32%),12$^{th}$ pass (34%), and graduates (30%) respondents, while the illiterate respondents (35%), and higher education respondents (38%), had the least preference for 'anytother activities'. The most preferred occupation for the general community was agriculture (48%), the OBC community preferred tourism (42%), and more than half (52%) of the respondents from the SC/ST community preferred fishing as an economic activity.

Community and education were the only two socio-demographic variables in which significant variation was observed in terms of the preference for occupational activity. There was significant variation in the preference for agriculture (p=0.001) and fishing activity (p=0.001) among different communities as shown in table.3. The post-hoc test suggests that all three communities significantly varied from each other in terms of preference for agricultural activity. The General community preferred agriculture (M= 2.78), while the OBC (M=2.32) and SC/ST community were least interested in agriculture activity (M=1.90). In terms of fishing activity, the SC/ST and OBC communities significantly varied from the general community. SC/ST (M= 2.64) and OBC communities (M= 2.63) preferred fishing activities more. The above data validates the prevalent conflict between the '*bhumiars*' an agricultural upper caste who considers that the land derived from the lake is a fertile agricultural land and should be used as an agricultural land. On the other hand *saini*sa fishing community in SC caste considers the lake as a fishing ground. However, some*sainis* also showed their concern for seasonal nature of fishing during which they have to get involved in other activities like working as a wage labourers in agricultural field or construction sites and they considered tourism as a better alternate opportunity to get employed in off-seasons.

**Table 3. Occupation Preferred**

| Socio-demographic Variable | Agriculture | Fishing | Tourism | other activities |
|---|---|---|---|---|
| **Gender** | | | | |
| Male | 2.45 | 2.30 | 2.12 | 3.14 |
| Female | 2.34 | 2.33 | 2.15 | 3.10 |
| t-test | 0.494 | 0.838 | 0.80 | 0.79 |
| **Age** | | | | |
| Below 25 | 2.36 | 2.30 | 2.11 | 3.18 |
| 25-50 | 2.55 | 2.30 | 2.04 | 3.10 |
| Above 50 | 2.20 | 2.36 | 2.30 | 3.10 |
| P(anova) | 0.178 | 0.94 | 0.34 | 0.87 |
| **Earnings** | | | | |
| Less than 10000 | 2.28 | 2.23 | 2.15 | 3.22 |
| 10000-20000 | 2.61 | 2.27 | 2.06 | 3.00 |

| | | | | |
|---|---|---|---|---|
| 20000-30000 | 2.22 | 2.42 | 2.14 | 3.20 |
| Above 300000 | 2.54 | 2.18 | 2.21 | 3.07 |
| P(anova) | 0.18 | 0.81 | 0.92 | 0.62 |
| **Education** | | | | |
| Illiterate | 2.71 | 2.52 | 1.87 | 2.84 |
| High school | 2.12 | 2.17 | 2.28 | 3.41 |
| $12^{th}$ | 2.50 | 2.08 | 2.23 | 3.21 |
| graduate | 2.38 | 2.55 | 2.02 | 2.98 |
| Higher education | 2.63 | 2.44 | 2.13 | 2.81 |
| P(anova) | 0.11 | 0.169 | 0.35 | 0.03* |
| **Community** | | | | |
| General | 2.78 | 1.90 | 2.16 | 3.11 |
| OBC | 2.32 | 2.63 | 1.95 | 3.09 |
| SC/ST | 1.90 | 2.64 | 2.26 | 3.17 |
| P(anova) | 0.001** | 0.001** | 0.183 | 0.905 |

****P < 0.01, *p< 0.05**

### 3.2.2. Familiarity with the tourism sites

Under the familiarity with tourism sites the first question was, which site are you familiar with? To this end, all the respondents were aware of 'Kawar Lake' and 'Jaimangalagarh',- a small temple island located in the southeast corner of the wetland. It is an ancient temple of Goddess Sarvamangla. The third important site in the vicinity of Kawar Lake was Harsai Stupa. However, only 45% of the respondents were aware of such a rich archaeological site.

Respondents were also aware of other sites around Kawar Lake, like Radhey Shyam Temple, Panch Mandir, Navlakha Temple, and an annual fair held at the Simaria Ghat at the bank of River Ganga. The response to the second question, i.e., what is the importance of the site? suggests that people are well aware of the majestic grandeur and ecological importance of the lake and other tourist sites. They also have knowledge of the wetland status of the lake; however, some respondents were not aware of the 'Ramsar' status of the lake or the various preservation and conservation laws imposed in the Lake Region. About 'Jaimangalagarh' they said that it is a small temple island located in the southeast corner of the wetland, which is an ancient temple of Goddess Sarvamangla. **Ankurinath** Panch Mandir consists of the "figurines of the gods and goddesses and Shivalinga, all belonging to the Pala era". **Naulakha Temple** isa very old temple but it still possesses an exquisite lustre. About **Radhe Shyam Temple**, one of the respondents commented that "the temple is beautifully decorated with the frescoes depicting the scene from the Ramayana and Mahabharata" while another respondent said that it belongs to the "Shekhawati School of Paintings in Rajasthan".

### 3.2.3. Want Tourism Development

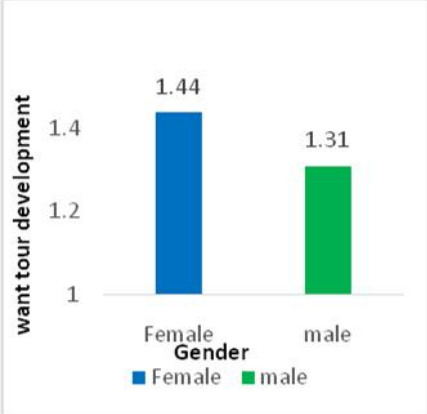
In the present study, it was found that respondents have a positive opinion about tourism development. In the question related to tourism development, about 67 % (n=133) were in favour of tourism development. However, there was a significant difference between the male and female respondents (p=0.001), average number of females (M=1.44) preferring tourism development, was higher than that of males (M=1.31) as shown in Figure 1. There were considerable variation (p=0.02) in the views of different communities regarding tourism development. Respondents hailing from the SC/ST community (M=1.48) have more preference for tourism development than general (M=1.26) and O.B.C. (M=1.28) communities, Figure 2 shows this difference. About 35% of

respondents with incomes below Rs 10000 wanted tourism development. 46% of the respondents in the middle-income group wanted tourism development. The educational groups that were not much interested in tourism development were the respondents with no formal education (12.8%) and higher education groups (7.5%).

**Table 4. Want tourism development by different socio-demographic groups**

| Socio-demographic characteristic | Want tour development |
|---|---|
| Gender | |
| Male | 1.31 |
| Female | 1.44 |
| P(T-Test) | 0.001** |
| Age | |
| Below 25 years | 1.28 |
| 25-50 years | 1.31 |
| Above 50 | 1.44 |
| P (ANOVA) | 0.175 |
| Earning | |
| Less than 10000 | 1.23 |
| 10000-20000 | 1.44 |
| 20000-30000 | 1.32 |
| Above 30000 | 1.36 |
| P (ANOVA) | 0.128 |
| Education | |
| Illiterate | 1.45 |
| High school | 1.38 |
| 12 th | 1.21 |
| Graduate | 1.32 |
| Higher education | 1.38 |
| P (ANOVA) | 0.199 |
| Community | |
| General | 1.26 |
| O.B.C | 1.28 |
| SC/ST | 1.48 |
| P (ANOVA) | 0.02** |

****P < 0.01, *p< 0.05**



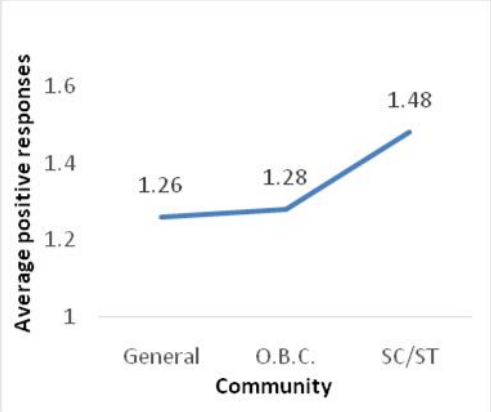




**Fig.1. Preference for tourism development Fig.2.Community-based difference in preference for tourism**

### 3.3. Approach and Adaptability for tourism development

There are many poverty and unemployment-stuck sites that have been developed only through the participation of people in different activities (Ashley et al., 2000). So, it was evident to know the approach and adaptability of the residents for tourism development in the region. Based on their adaptability, better planning for tourism development in the future can be done.

**Table.4. Approach of socio-demographic group to engage in tourism activities**

| Socio-demographic variables | | Concept of homestay | Provide homestay | Participate in skill dev | Provide food |
|---|---|---|---|---|---|
| **Gender** | Male | 1.76 | 1.50 | 1.60 | 1.41 |
| | Female | 1.75 | 1.67 | 1.38 | 1.41 |
| | P(T-Test) | 0.821 | 0.015* | 0.002** | 0.924 |
| **Age** | Below 25 years | 1.64 | 1.76 | 1.49 | 1.39 |
| | 25-50 years | 1.73 | 1.52 | 1.69 | 1.58 |
| | Above 50 | 1.90 | 1.49 | 1.41 | 1.33 |
| | P (anova) | 0.001** | 0.007** | 0.05* | 0.013* |
| **Earnings** | Less than 10000 | 1.83 | 1.57 | 1.68 | 1.35 |
| | 10000-20000 | 1.73 | 1.63 | 1.44 | 1.44 |
| | 20000-30000 | 1.72 | 1.56 | 1.40 | 1.42 |
| | Above 30000 | 1.71 | 1.46 | 1.58 | 1.46 |
| | P (anova) | 0.419 | 0.541 | 0.04* | 0.705 |

| | | | | | |
|---|---|---|---|---|---|
| **Education** | Illiterate | 1.90 | 1.58 | 1.48 | 1.32 |
| | High school | 1.81 | 1.62 | 1.53 | 1.38 |
| | 12 th | 1.81 | 1.54 | 1.52 | 1.44 |
| | Graduate | 1.62 | 1.60 | 1.45 | 1.51 |
| | Higher education | 1.50 | 1.38 | 1.56 | 1.31 |
| | P (anova) | 0.003** | 0.501 | 0.889 | 0.418 |
| **Community** | General | 1.68 | 1.71 | 1.49 | 1.44 |
| | O.B.C | 1.57 | 1.68 | 1.54 | 1.42 |
| | SC/ST | 1.47 | 1.86 | 1.49 | 1.38 |
| | P (anova) | 0.04* | 0.03* | 0.715 | 0.807 |

****P < 0.01, *p< 0.05**

### 3.3.1. Concept of homestay

In the surveyed area, about 75% of the total respondents, irrespective of their socio-demographic characteristics, were unaware of the concept of homestay. However, in this study, it was found that there was a significant difference (p=0.001) regarding the knowledge of homestay among varied age groups and in different communities. Respondents in the middle age group between (25-50 years old) were more aware (n=49%) of the concept of homestay. It can be attributed to the fact that the respondents in this age group travel frequently to other places to earn their livelihood, and their contacts with external sources made them aware of the concept of homestay. The young respondents (below 25) were also aware (45%) of the homestay concept. One of the respondents said that 'he got aware about homestay concept through social media sites like Facebook, you Tube reels etc.' APost-hoc test suggests that the age group below 25 and 25-50 years are different from the age group above 50 years. Only three respondents over 50 years old were aware about homestay. The OBC community (n=32%) was more aware of the homestay concept than the general (N=29%) and SC/ST (N=14%) communities. There was considerable variation (p=0.03) in the awareness of the concept of homestay among different communities. The post hoc test shows that in terms of awareness of the concept of homestay, the general and OBC communities differ from the SC and ST communities. In Table 4 it can be seen that general and OBC communities are more aware of the homestay concept than SC/ST communities. Fig. 3. Shows a positive response in percentage based on educational qualification.

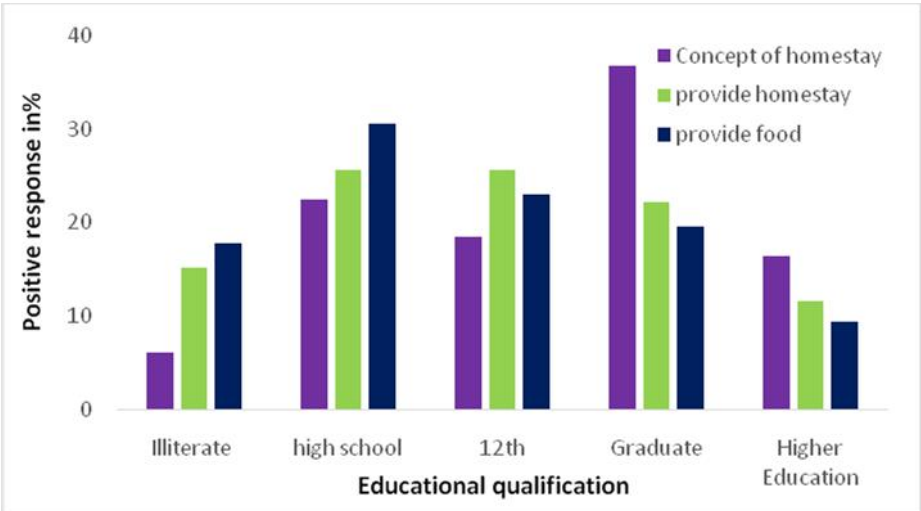
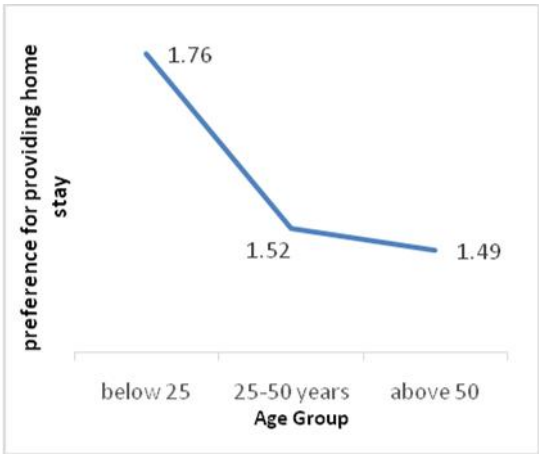



**Fig. 3. percentage-wise differences in preference of tourism related activities**

### 3.3.2. Provide homestay

There were about 46% respondents who were in favour of providing homestays to tourists. There was a significant difference (p=0.02) between males and females in their readiness to provide homestays. The average number of female respondents had a more positive response (M=1.67) towards providing homestays to tourists than their counterpart male respondents (M=1.50). There was a significant difference between the respondents from different age groups. Fig. 4.shows that age group 1-25 is significantly different from age groups 25-50 years and above 50. The elderly respondents were more sceptical about providing residential facilities to the unknown even in exchange for money, as they didn't find it safe to give shelter to a stranger even if it was facilitated by the government. Community was another socio-demographic variable with a significant difference. A higher percentage (53%) of the SC/ST community were in favour of providing homestay facilities to tourists. Fig. 5. shows difference between SC/ST and other communities in their preference for providing home stay facility.



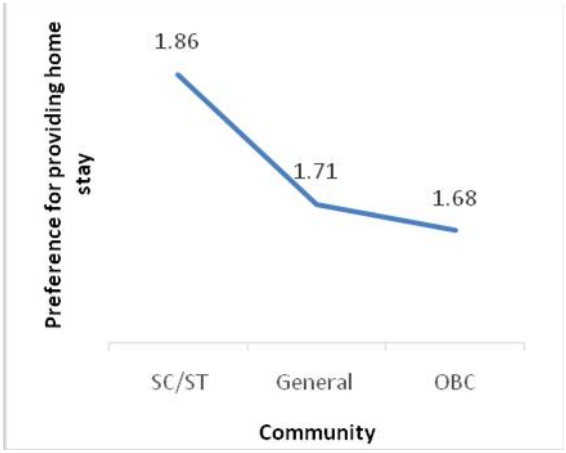




**Fig.4. difference between younger and other age group** `

**Fig.5. Difference between SC/ST and other communities**

**3.3.3. Provide food facilities –** There was a significant difference (p=0.01) in terms of providing food facilities among respondents of different age group. Respondents of middle age group i.e. between 25-50 years were more interested (M=1.58) in providing food facilities in exchange for money than the old age group (M=1.33) and younger age group (M=1.39) respondents. A post hoc test suggests that the younger and older respondents significantly varied from middle-aged people (25-50 years) in their liking for providing food facilities. Though other socio-demographic variables were not significantly different, but, based on percentage, 33% of the respondents from the lower earning strata wanted to provide food to tourists in exchange for money, while only 13% of the respondents from the upper income level wanted to provide food to tourists in exchange for money. With respect to education, almost all the respondents with different educational qualifications wanted to provide food facility except the respondents with higher educational qualification. Only about 9% of the highly educated respondents agreed to provide food facilities. About40% of the respondents from the SC/ST community wanted to provide food in return for money, and about 29% of the general population and 32% of the OBC community wanted to provide food. Figure 6 shows people with lower incomes want to provide food in exchange for money.

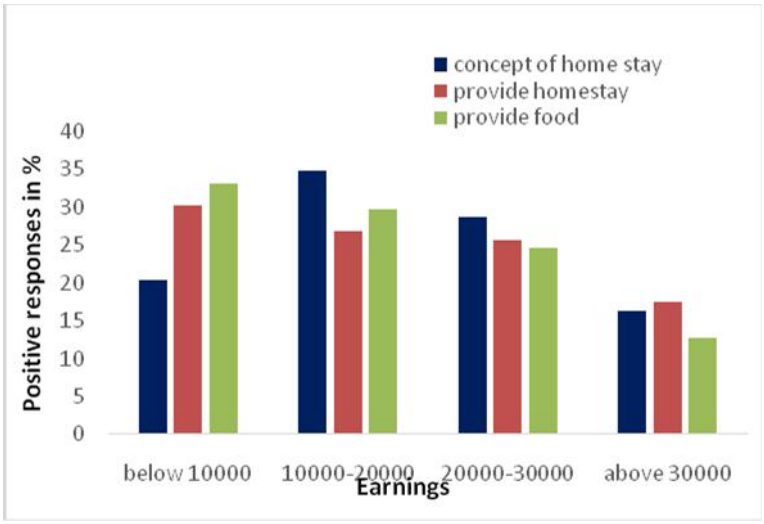
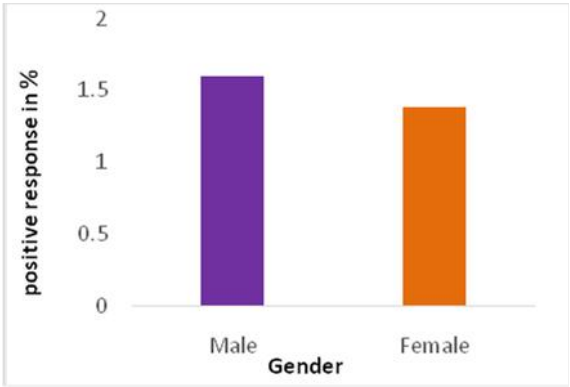



**Fig. 6. percentage wise differences in preference of tourism related activities**

**3.3.4. Participate in skill development**: There was a considerable variation between male and female (p=0.002), respondents of different age groups (p=0.05) and different income groups (0.04). Men (M=1.60) were more inclined towards learning new skills for tourism development (fig.7). Middle-aged people (25-50 years) were more enthusiastic to participate in the skill development activities relating to tourism development. Younger (M=1.49) and older (M=1.41) respondents were notvery enthusiastic to participate in skill development activities, required in tourism sector. There was a significant difference (0.04) in the likelihood of getting engaged in the skill development activities based on the earnings. The respondents with the least income were more interested (fig. 6) in developing the skills that can be used for tourism development. However, respondents with income above 30,000 were also interested in getting the skill-based training that can be used for tourism-related activities. Respondents in the middle income brackets were not interested in receiving skill-based training for tourism development.



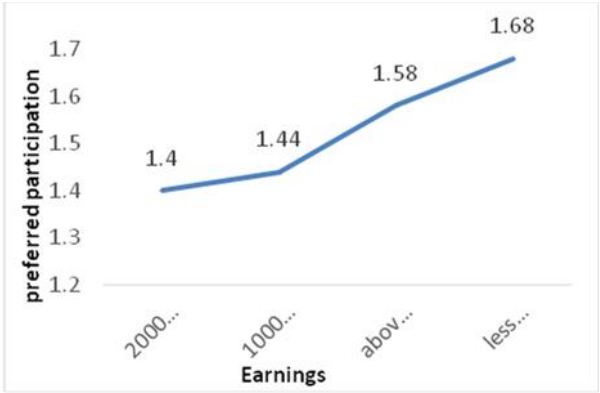




**Fig.7. Gender difference in skill development participation**

**Fig.8. Differences in participation in Skill Development program**

### 3.3.5. Participation in different activities

Ecotourism strongly emphasizes benefits to local community and suggests the involvement of the residents is important for effective management of tourism (Zang & Lei, 2012). In different rural wetland areas the new law on spatial planning obliges local authorities to draft their own land-use plans ranging from road networks, home stay, providing food and protection and management of the natural and cultural assets (Bego; Malltezi,2010; Colvin, 1994). The participation of the residents can ensure the judicious and utmost utilisation of resources along with generating employment opportunities. So, this section tries to explore the preference of different socio-demographic groups to participate in different activities pertaining tourism-enhancing facilities around Kawar Lake.

#### 3.3.5.1. Gastronomy

The respondents were asked about their preference for participation in the tourism-related activity. The first question that was asked was related to their preference for participation in gastronomy-related activities because there are many edible products like*Trapa natans fruits* and *pooran* or *purain (Nelumbo nucifera)* leaves. Apart from *Singhara* (*Trapa natans*) other prominent food plants were *Ramdana* (Pomona spp.), *Makhana* (Euryale ferox) and *Kamal kakri* (*Nelumbo nucifera*) (Ambasta et al., 2007). These products can be used for making different delicacies to attract tourists who are driven by their taste buds. About 50% of the surveyed respondents wanted to participate in gastronomy-related activities. Under various socio-demographic variables, it was found that there was considerable variation in gender (p=0.003) and age groups (p=0.002) regarding their participation in gastronomy-related tourism activity. On average, more females (n=54, M=0.62) were interested than males (n=46, M=0.41) in gastronomy. Respondents below 25 years of age (M=0.62) were more interested in gastronomy, followed by respondents between the age group (25-50). Old age respondents were the least interested group. Therefore, there was a significant difference between the below-25, 25-50 age group and the above-50 age group.

**Table.5. preference to get engaged in different tourism activities**

| Socio-demographic | | Gastronomy | Hedonic | Handicraft | transport | Accommo-dation | safety |
|---|---|---|---|---|---|---|---|
| **Gender** | Male | 0.41 | 0.58 | 0.58 | 0.52 | 0.46 | 0.35 |
| | Female | 0.62 | 0.49 | 0.61 | 0.32 | 0.33 | 0.36 |
| | P(T-Test) | 0.003** | 0.252 | 0.721 | 0.004** | 0.071 | 0.870 |
| **Age** | Below 25 years | 0.62 | 0.44 | 0.69 | 0.51 | 0.49 | 0.31 |
| | 25-50 years | 0.53 | 0.49 | 0.63 | 0.43 | 0.43 | 0.38 |
| | Above 50 | 0.30 | 0.69 | 0.42 | 0.36 | 0.26 | 0.34 |
| | P (ANOVA) | 0.002** | 0.016 | 0.011 | 0.290 | 0.040* | 0.667 |
| **Earnings** | Less than 10000 | 1.83 | 1.57 | 1.35 | 0.35 | 0.35 | 0.38 |
| | 10000-20000 | 1.73 | 1.63 | 1.44 | 0.50 | 0.47 | 0.35 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 20000-30000 | 1.72 | 1.56 | 1.42 | 0.48 | 0.48 | 0.30 |
| | Above 30000 | 1.71 | 1.46 | 1.46 | 0.39 | 0.25 | 0.36 |
| | P (ANOVA) | 0.385 | 0.516 | 0.754 | 0.332 | 0.127 | 0.839 |
| **Education** | Illiterate | 0.39 | 0.35 | 0.48 | 0.35 | 0.26 | 0.29 |
| | High school | 0.50 | 0.55 | 0.53 | 0.45 | 0.43 | 0.43 |
| | 12 th | 0.54 | 0.52 | 0.60 | 0.33 | 0.40 | 0.35 |
| | Graduate | 0.49 | 0.60 | 0.77 | 0.51 | 0.49 | 0.32 |
| | Higher education | 0.63 | 0.75 | 0.50 | 0.63 | 0.38 | 0.25 |
| | P (ANOVA) | 0.575 | 0.099 | 0.044* | 0.179 | 0.359 | 0.554 |
| **Community** | General | 0.51 | 0.50 | 0.57 | 0.46 | 0.40 | 0.38 |
| | O.B.C | 0.42 | 0.56 | 0.65 | 0.37 | 0.40 | 0.32 |
| | SC/ST | 0.57 | 0.57 | 0.57 | 0.47 | 0.42 | 0.35 |
| | P (ANOVA) | 0.198 | 0.002** | 0.597 | 0.428 | 0.969 | 0.791 |

****P < 0.01, *p< 0.05**

**3.3.5.2. Hedonic values**- Since the lake is an eco-tourism site located amidst the scenic landscape, alarge number of migratory birds visitevery year during the wintering season. The site can provide an exquisite location for developing hedonic value-related activities in which people can engage themselves. To participate in hedonic value related-activity, there were two socio-demographic variables: age (p=0.02) and community (p = 0.002) that were found to vary significantly. More elderly people wanted to participate in promoting the hedonic-value of the lake,and it significantly varied from the middle and young age group respondents (Fig. 9.a.) Older people were of the opinion that they could recognise the wide variety of flora and fauna species around the lake from their experiences. Some elderly respondents said that they can also recall and recite popular folklore related to the migratory birds visiting here. The childhood memories that they attach to the place make them interested in participating in the hedonic value of the place. Among different communities, also respondents hailing from the SC/ST community (M=0.57) and the OBC community (M=0.56) significantly varied from the general community (M=0.50). It can be said many labourers working in and around lake belong to SC/ST and OBC community. So their direct connection and closer observation of the lake enhances their hedonic knowledge about lake.

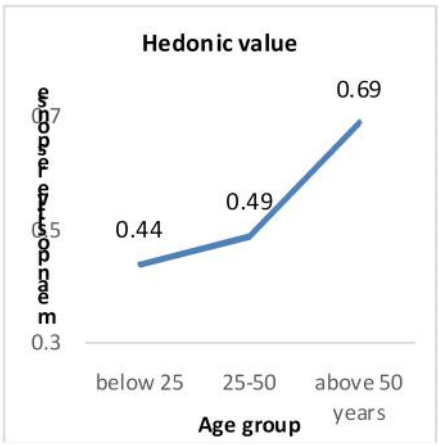



**Fig.9.a Age wise difference in participation**

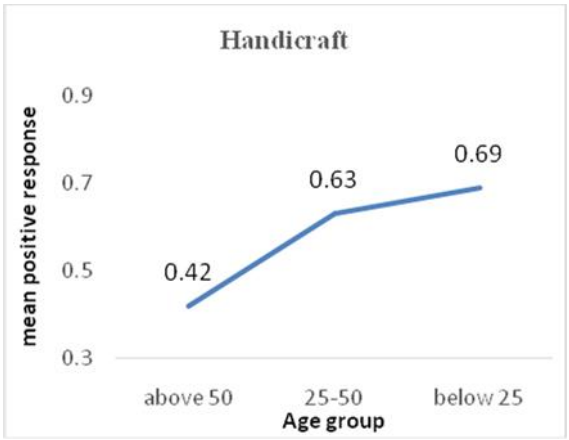



**Fig.9.b. Age wise difference in participation**

**3.3.5.3. Handicraft-** Age and education were the two socio-demographic variables that were found to vary significantly. There was significant variation among the different age groups who wanted to participate in handicraft making. On average young (M= 0.69) and middle age group (M=0.63) respondents showed more interest in participating in the making of the handicraft products for the tourists. Fig 9.b shows that the young and middle-aged respondents varied from the old-age respondents. Based on the educational qualifications there was significant variation in the respondent's preferences to get involved in handicraft-making activities. On average graduates (M=0.77) were keenly interested in participating in handicraft work. The respondents with the educational qualifications of $12^{th}$grade (M=0.60) and high school (M=0.53) had similarity in their opinion regarding their involvement in handicraft product-making-related activities. Highly educated and respondents with no formal education had less interest in participating in these activities.

**3.3.5.4. Transportation/guide-** In providing transportation facility, gender was the only variable that varied significantly, while none of the other socio-demographic variables were significant. Traditionally, women are not involved in transport-related activities, so they did not opt for it and 100% of the women's responses were no. However, some women showed interest in playing the role of tourist guide to showcase the culture of the village. So, there was a significant difference (0.004) between the male and female, and more males(M=0.52) wanted to get involved in transportation-related activities than females.

**3.3.5.5. Accommodation-** There was a considerable variation (p=0.04) regarding their preference to get involved in providing paid accommodation facilities based on the age group. Younger people (below 25) were more enthusiastic about participating in providing the accommodation-related facilities. Further, it was found that there was similarity in the opinion of the younger (below 25)and middle-aged groups (25-50 years)(fig 9.c.), but there was variation in the opinion of the young(M=0.49)and old- age respondents (M=0.26). Further, the respondents also suggested that the abandoned huts can be utilized for providing accommodation facilities and the raw materials derived from the lake can be used for creating such housing spaces that can rejuvenate the senses of the tourists with a real village-like experience.

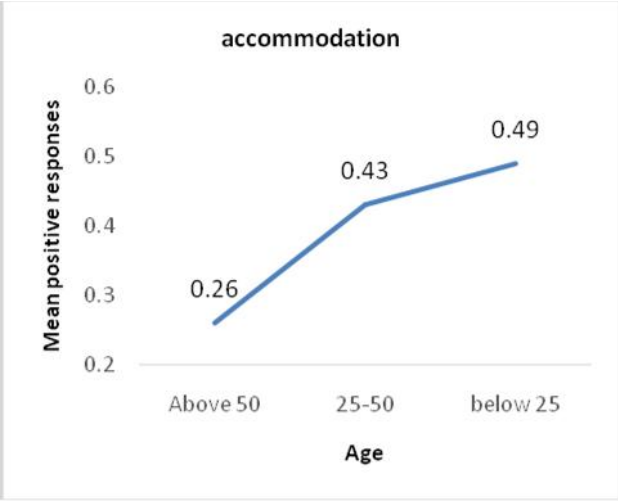



**Fig. 9.c. Age-wise difference in participation**

**3.3.5.6. Safety-** Safety is one of the greatest concerns for any tourist. Therefore, it is the responsibility of the resident to provide security to the tourists. In the study, it was found that 38% of the respondents wanted to participate in security providing facilities. Community was the only variable that varied considerably (p= 0.02) in their interest in providing security to the tourists. Among different communities, respondents from the SC community were more enthusiastic (m=0.51) to participate in security related activities, while the general and OBC communities were less enthusiastic about getting involved in security-related activities. No significant difference was found in other socio-demographic variables for providing security services.

## 3.4. Preservation and Conservation of the lake

Under preservation and conservation, three questions were asked: What are the major hindrances to the growth of the region? Is the asset worth conserving? Would you like to participate in a conservation program?

**Table 6. Approach of different socio-demographic group towards preservation of lake**

| Socio-demographic variables | | Participation in conservation | Asset worth conserving |
|---|---|---|---|
| **Gender** | Male | 1.28 | 1.27 |
| | Female | 1.34 | 1.31 |
| | P(T-Test) | 0.07 | 0.48 |
| **Age** | Below 25 years | 1.23 | 1.20 |
| | 25-50 years | 1.34 | 1.28 |
| | Above 50 | 1.36 | 1.40 |
| | P (ANOVA) | 0.275 | 0.061 |
| **Earnings** | Less than 10000 | 1.40 | 1.27 |
| | 10000-20000 | 1.21 | 1.27 |
| | 20000-30000 | 1.30 | 1.26 |
| | Above 30000 | 1.36 | 1.29 |
| | P (ANOVA) | 0.14 | 0.602 |
| **Education** | Illiterate | 1.32 | 1.39 |
| | High school | 1.36 | 1.22 |
| | 12 th | 1.25 | 1.27 |
| | Graduate | 1.28 | 1.30 |
| | Higher education | 1.38 | 1.31 |
| | P (ANOVA) | 0.718 | 0.601 |
| **Community** | General | 1.35 | 1.28 |
| | O.B.C | 1.29 | 1.18 |
| | SC/ST | 1.29 | 1.49 |
| | P (ANOVA) | 0.722 | 0.01* |

***p< 0.05**

**3.4.1. Hindrances to the growth of tourism-** There were five options provided to rate the major hindrances to the growth of tourism. The options were lack of infrastructure, lack of tourism resources, government attitude, local conflict, and any other. The majority of respondents (38%) consider the attitude of the government to be a major hindrance to the growth of tourism, as the majority respondents were of the opinion that the government is imposing restrictions on deriving valuable lake products without providing them with any alternate source of livelihood, and though the lake is declared bird sanctuary, no systematic effort has been made to develop the region, leading to several illegal activities that have further degraded the lake. Lack of infrastructure was considered second major hindrance, though there is no dearth of rural scenic beauty, but there is a lack of supporting infrastructure like transport facilities, accommodation facilities, proper approach roads, which are necessary for tourism development.18% people consider local conflict as a major hindrance to development. Very few respondents(fig. 10.a.) considered that the lack of tourism resources and other factors are major hindrances for tourism development.

Respondents considered that floods, during monsoon, when the lake is full to its capacity, spilling takes place through the south-eastern portion causing inundation (Sinha, 2008), climate related vagaries, lack of proper drainage facilities and other natural factors were responsible for the lack of tourism development.

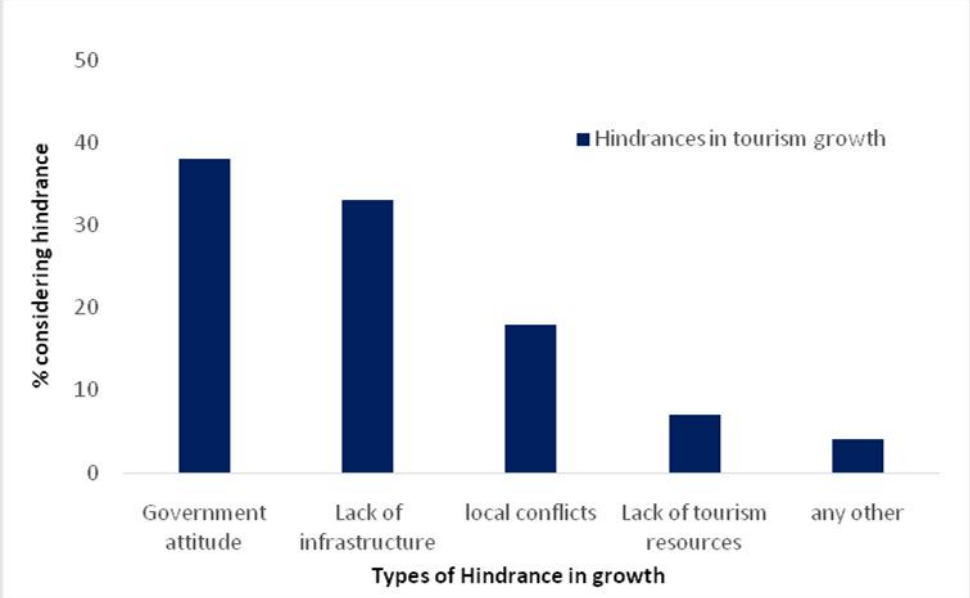
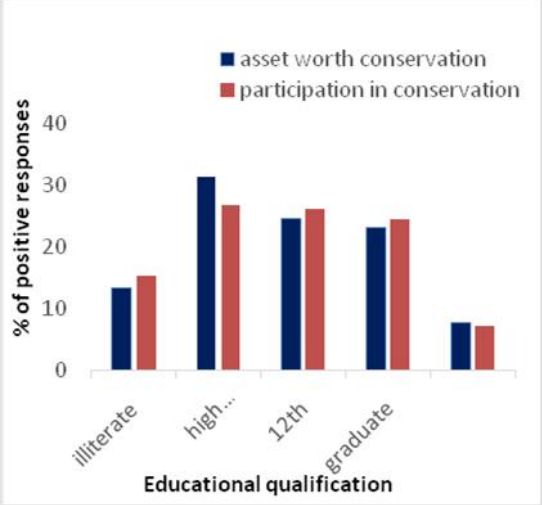



**Fig. 10.a. hindrances in the growth of tourism**

**3.4.2. Asset worth Conserving-** The respondents, irrespective of gender, age, earning, and education, were of the opinion that the resources are worth conserving and can be used for tourism purposes. Community was the only socio-demographic variable in which significant variation (p=0.01) in terms of the opinion regarding the conservation of assets was observed. It was found that the SC/ST were more inclined towards resource conservation and management (M= 1.49) while the general category people (M=1.28) were of the view that the land derived from the lake is quite fertile and can be used for agricultural activities.However based on percentage 28 % general category people agreed that the asset is worth conserving as it can be seen in figure 10.e., while percent wise variation among varied age-group can be seen in fig. 10 (b-d).



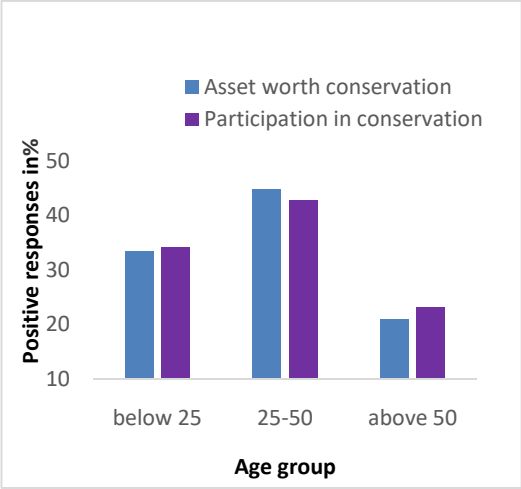
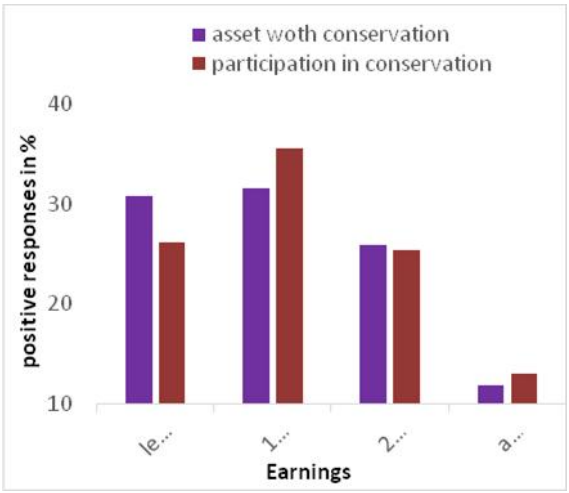




**Fig.10.b. difference based based on educational qualification**

**Fig.10.c. difference based on Age group**

**3.4.3. Participation in conservation**: In terms of participation in conservation of the lake, none of the socio-demographic variables were found to be significantly different. However, it was observed that respondents, irrespective of gender, would like to participate in the conservation of the lake. In terms of earning 26.1% of respondents with earning less than Rs 10000 were in favour of participating in conservation-related activities; similarly, 35.5%of respondents with earning between Rs 10000-20000, 25.4%of respondents with earning between Rs 20000-30000, 13%of the respondents with earnings above Rs 30000 wanted to participate in conservation programs, as can be seen in fig. 10.d. In terms of education, 26.8% high school pass, 12$^{th}$ pass (26.1%) and graduates (24.6%) were more willing to participate in conservation activities (fig. 10.b.). However, a higher percentage of respondents with no education (15.2%) and higher education (7.2%) were reluctant to participate. 70% of OBC and SC were willing to participate while 65% of the respondents in general category wanted to participate in conservational activities.



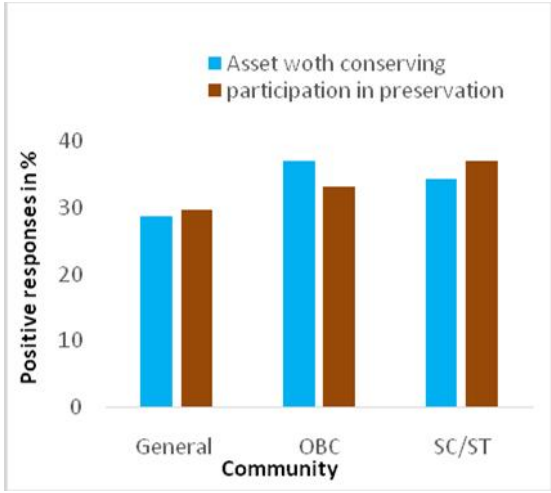




**Fig.10.d. difference based on earnings**

**Fig.10.e. difference based on community**

## 4. Conclusion

This survey was conducted in one of the underdeveloped and neglected wetlands of India to explore the resident's views regarding tourism development in the region, their opinions and preferences to participate in different tourism and infrastructural development activities. Along with that, the study tried to identify hindrances in growth of tourism. Since the basis of the study was the socio-demographic groups, the study may provide an insight into identifying the positively motivated group towards tourism development and focusing more on the interested groups, while planning community-based eco-tourism growth in the region. The residents have also identified the major hindrances to the growth of tourism in the region that can be sorted out while planning for tourism development. Various types of skill development programs can be launched for different age groups (male and female), earnings categories and communities, based on their preferences for getting involved in various tourism-related activities.

The cultural aspects of wetlands should be fully incorporated in the management planning of sites, involving relevant indigenous people and local communities as well as other stakeholders (Papayannis, 2008). In many underdeveloped and developing countries, successful community-based projects have been launched involving the local people at their core. Kawar Lake, being one of the largest freshwater oxbow lakes in India and only Ramsar site in Bihar, and its location in an underdeveloped region make it worthy of being developed as an eco-tourism site based on community involvement. The development of Kawar Lake will generate revenue and facilitate the growth of the region as well. It might contribute to eliminating widespread poverty and unemployment, which are the root causes of migration, widespread criminal activities, illegal poaching, and other heinous crimes prevalent in the region.

Further, the study opens the door for future research in tourism related activities since the earlier studies conducted on Kawar Lake were based on geomorphological features, flora and fauna diversity, and the quality of lake water (Singh & Jayakumar, 2016), sustainable development and fish management (Roy et al., 2007), and anthropogenic pressure, and conservation, and management of lakes in different regions(Singh et al.,2021). In the future, detailed research can be carried out on any particular socio-demographic group, and a study can be conducted to gauge the potential of tourism resources as well as infrastructural development-related facilities in the region. A detailed study can be conducted to highlight the hindrances to the growth of tourism in the region.

## References


1. Ambastha, K., Hussain, S.A., Badola, R. 2007.Social and Economic Considerations in Conserving Wetlands of Indo-Gangetic Plains: A Case Study of Kabartal Wetland, India, *The Environmentalist* 27, 261-273
2. Ashley, C. 2002. Methodology for Pro-poor Tourism Case Studies. PPT Working Paper No. 10, Overseas Development Institute Retrieved fromhttp://www.propoortourism.org.uk/10 methodology.pdf
3. Baker, N.J. 2008. Sustainable Wetland Resource Utilisation of Sango Bay through Eco-Tourism Development. *African Journal of Environmental Science and Technology*, Vol.2 (10), pp. 326-335.
4. Bego, F. & Malltezi, J. 2011. Ecotourism Opportunities and Challenges in Butrint, Albania, a Unique UNESCO and Ramsar Site. *Journal of Coastal Research* 61 (Special Issue): 150-157.
5. Burns, C.A., Veeck, A., Bush, R.F., 2017. Marketing Research. *Pearson, Eighth ed.p. 27.*
6. Campbell, L. M. 1999. Ecotourism in rural developing communities. *Annals of Tourism Research*, 26(3), 534–553 (cross-ref)
7. Cheung, S.C. 2008. Wetland Tourism in Hong Kong; From Bird watchers to mass Eco tourists in Asian Tourism Growth and

Change, Cochrane. *J., Ed.; Elsevier*: Amsterdam, The Netherlands, pp. 259-268.
8. Colvin, J.G. 1994. Capirona: A model of Indigenous Ecotourism. *Journal of Sustainable Tourism*, Vol.2 (3)
9. Fernandez, J.I.P., Caldito, L.A., Rivero, M.S. 2015. "Is Sustainable Tourism an Obstacle to the Economic Performance of Tourism Industry? Evidence from an International Empirical Study. *Journal of Sustainable Tourism*, 23 (1).
10. Keenan, R.J., Pozza, G., Fitzsimons, J. 2019. Ecosystem Services in Environmental Policy: Barriers and Opportunities for increased Adoption. *Ecosystem Services* 38, 100943
11. Kumar, R. & Pandey, V.V. 2017. Kanwar Lake: A Dying Wetland Ecosystem. 3rd International Conference on Environment and Ecology
12. Macharia, J.M., Thenya, T. & Ndiritu, G.G. 2011. "Management of Highland Wetlands in Central Kenya: the Importance of Community Education, Awareness and Eco-tourism in Biodiversity Conservation. *Biodiversity* 11:1-2, 85-90.
13. Lin, W., Xu, D., Guo, P., Wang, D., Li, L., & Gao, J. 2019. Exploring Variations of Ecosystem Service Value in Hangzhou Bay Wetland, Eastern China, *Ecosystem Services 37,1-9.*
14. Murphy, R. 1985. Tourism: A Community Approach", *Tourism Planning Goals and Method, Routlege Taylor and Francis*.
15. Papayannis, T. and Pritchard, D.E. 2008. Culture and Wetlands- a Ramsar Guidance Document. *Ramsar Convention, Gland, Switzerland*.
16. Paul, S. & Nagendra, H. 2017. Factors Influencing Perception and Use of Urban Nature: Surveys of Perk Visitors in New Delhi. *Land*, 6 (27)
17. Prakash, B. and Pandey, R.K. 2018. Strategies for Wetland Conservation: Study of Kanwar Wetland, *Begusarai, International Journal of Science and Research, ISSN: 2319-7064, 1021-1023.*
18. Rohitashwa, R. and Choudhary, D.N. 2013. Kawar Lake Bird Sanctuary under Threat" Science Reporter
19. Ryan, R. 2012. Effects of Ecotourism and Adventure Tourism in the Santa Cruz Province, Argentina", *Environmental Science, Economist*
20. Sharma, U.P. 1993. Origin, Geomorphology and Current Trends of Terrestrialisation of Kawar Lake ( Begusarai), Bihar: A Typical Wetland System of India", *Inland Waters, 25 (2), 804-810.*
21. Simpson, M.C. 2008. Community Benefit Tourism Initiative: A Conceptual Oxymoron? *Tourism Management*, 29 (1), 1-18.
22. Sinha, C.P. 2008. Management of Kawar Lake. Proceedings of the National Seminar on Conservation and Restoration of Lakes (CAROL-08), 16-17 October 2008 at Nagpur, Volume-II.
23. Singh, A. and Jayakumar, S. 2016. Water Quality Assessment of Kanwar Lake, Begusarai, Bihar, India**.** *Environmental Science Imperial Journal of Interdisciplinary Research (IJIR), Vol-2, Issue-4, 793-803.*
24. Singh, A., Mani,S., Verma, S., Kumar, A. 2021. Asessment of Anthropogenic Pressure and population attitude for the Conservation of Kawar Wetland, Begusarai, India: A Case Study", Pollution and Water Management Resources, Strategies and Scarcity, John Wiley and Sons Limited, 1st edition, 22-46.
25. Vincy, M., Rajan., B., Kumar, P. 2012. Water Quality Assessment of a tropical Wetland Ecosystem with Special Reference to Backwater Tourism, Kerala, South India." *Int. Res. J. Eniron.* Sci. 62-68.
26. Wall, G. 1997. Is Ecotourism Sustainable. *Environmental Management*, 21(4): 483-91
27. Weaver, D. (2001): "Ecotourism", *John Wiley and Sons Australia*, xiii, 366 p.
28. Roy,S.P., Ramanand, R., Prabhakar, A.K., Singh, J.P. 2007. *Sustainable Development of Kanwar Lake, Begusarai (North-Bihar, India), Proceedings of Taal, 1578-1585.*

29. Zang,H. & Lei, S.L.2012. A Structural Model of Residents' Intention to Participate in Ecotourism: The Case of Wetland Community" Tourism Management, 33(4), 916-925.
30. Birdlife International (2005) Birdlife's online World Bird Database: the site for bird conservation. Version 2.0.Cambridge, UK: BirdLife International. URL: http:// www.birdlife.org
31. Ramsar and UNWTO, 2012. Destination wetlands: supporting sustainable tourism. A report published jointly by Secretariat of the Ramsar Convention on Wetlands (Ramsar, Iran, 1971) and the World Tourism Organization (UNWTO).
32. National Wetland Atlas: India sponsored by Ministry of Environment and Forests, Government of India, As a part of the project on National Wetland Inventory and Assessment (NWIA), 2011.
33. Kanwar Jheel: An Integrated Management Action Plan for Conservation and Wise Use, Wetland International South Asia, February 2016.

**Access this Article in Online**

Website: www.ijarm.com

Quick Response Code

Subject: Tourism Management

DOI:10.22192/ijamr.2024.11.01.006

How to cite this article:
Arti Kumari. (2024). Exploring attitude, approach and adaptability of different socio-demographic variables for eco-tourism development in Kawar lake wetland region, Bihar, India. Int. J. Adv. Multidiscip. Res. 11(1): 29-50.
DOI: http://dx.doi.org/10.22192/ijamr.2024.12.01.006