

WILDLIFE TOURISM AT CHITWAN NATIONAL PARK: EVALUATING THE PERCEPTION OF TOURISTS ABOUT JEEP SAFARIS

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Abstract

This study was designed to collect tourist perceptions on aspects of Jeep safaris. A standard checklist containing questions related to the general background of the respondents, their experience with jeep safari at Chitwan National Park (CNP), and their perception of the impact of jeep safari on aspects of wildlife were prepared. Furthermore, tourism stakeholders bring up the discussion of night safaris at CNP as a product diversification option. Thus, the question related to the night safari was also included in the questionnaire. The responses of the visitors were collected using an online survey. The data was analyzed using Microsoft Excel and JASP software. Beeshazari and Kumroj were found to be more common than the core area for wildlife safaris. The respondent perceived that the wildlife was negatively impacted by Jeep Safari, and the overall management of Jeep Safari was satisfactory in all three locations. Majority of respondents believed that nature guides have moderate to extensive experience. More than half of the respondents were satisfied with their Jeep safari experience. Almost three-quarters of respondents expressed their opposition to the decision to launch a night safari at CNP. A statistically significant relationship was observed between the perception of the tourist about the impact on wildlife and their decision about a night safari. Controlling Jeep Crowd was the top suggestion received from the respondents. These findings can help management authority to amend the operation of the Jeep Safari at CNP so as to enhance visitor satisfaction and ensure the sustainability of the operation.

Key words: Sustainability, Tourism, Visitors Satisfaction.

DOI: <https://doi.org/10.3126/ije.v12i12.65435>

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Introduction

Wildlife tourism is an integral part of the extensive market of the nature-based tourism (Cong et al. 2017). It involves the interaction of the people with the wildlife, either in the form of a consumptive or non-consumptive use of the biodiversity (Puri 2019; Moghimehfar, Harshaw & Foote 2017). Wildlife hunting and fishing are some of the examples of consumptive use of wildlife, while elephant and jeep safaris, wildlife watching, bird watching, and a range of other activities are practiced either in natural habitats or captive settings. Wildlife tourism contributes both to the conservation of biodiversity and poses threats to it as well (Mustika et al. 2017). In the countries or regions where wildlife tourism forms the basis of their economies, understanding the tourism visitor interface is essential (Newsome et al. 2019).

Biodiversity Conservation is vital for the existence of humanity, and protected areas are the cornerstone of conservation in the 21st century. However, in the majority of the world's protected areas, conflicting interests among various stakeholders have created tension between park authorities and the general public. Meanwhile, it is difficult to carry out conservation activities without the help of the local community. Interlinking livelihood and conservation is highly essential for the efficient execution of conservation activities (Basnyat et al. 2012). Wildlife tourism can be a means of generating greater support from the local people for conservation. Wildlife tourism provides the dual benefit of providing employment opportunities for the local people in addition to supporting the conservation of wildlife (Thapa et al. 2017). In areas where alternative livelihood options are well supported by wildlife-based tourism, local people show stewardship towards the conservation of biodiversity. In the areas where alternative livelihood options are well supported by wildlife-based tourism, local people show stewardship towards the conservation of biodiversity (Kandel et al. 2020). Furthermore, wildlife tourism can be used to reconnect people with nature (Curtin & Kragh 2014). There is evidence that wildlife tourism contributes to people's social and mental well-being (Curtin 2009).

Chitwan National Park (CNP) is Nepal's most popular tourist destination (Aryal *et al.*, 2019), offering visitors the chance to participate in various forms of wildlife tourism. This includes bird watching, elephant riding, jeep safaris, and observing gharials and mugger crocodiles through canoeing. Jeep Safari is one of the most popular products on the CNP tourism market. The Jeep safaris have the potential to increase the length of stay of tourists in Chitwan National Park and provide additional livelihood support options to the locals. We know that solutions and alternative livelihood options offered by the tourism industry should be sustainable. Visitors' satisfaction is the key to achieving the sustainability of wildlife tourism-induced sustainable livelihood alternatives. However, the studies on the impact of the Jeep safari (Subedi 1999) and visitor perception of the Jeep safari in Chitwan National Park are limited. Furthermore, for the diversification of the tourism products,

voices related to Night Safari in Chitwan National Park tend to come to the surface without due acknowledgement of the visitors' willingness to participate.

This study has attempted to partially address the above research gaps by assessing the perceptions of the tourists who have participated in the Jeep Safari at Chitwan National Park. The objectives were to explore the perception about the Jeep Safari experience at Chitwan National Park and perception of the visitors about night safari proposals that are brought to the limelight by the tourism stakeholders from Chitwan National Park.

Materials and methods

Study area

Chitwan National Park (CNP) [Figure 1] (Latitude 27.537241 N and 84.447945 E) with an area of 949.26 km² is the first National Park and one of two natural World heritage sites of Nepal. It is a popular tourist destination in Nepal which receives the highest number of tourists among the protected areas of Nepal (Puri 2019; Aryal, Ghimire & Niraula 2019). Presence of megafauna species such as Royal Bengal Tiger (*Panthera tigris*), Greater One Horned Rhino (*Rhinoceros unicornis*) and other, easy access along with well-developed tourist infrastructure in the park drive the tourists to Chitwan. Jeep Safari, Elephant Safari, Bird Watching, Canoeing, Sight-seeing Opportunities, and a visit to the Gharial Breeding Center and Elephant Breeding Center are the major attractions for tourists (CNPO 2017). Jeep safari is one of the major attractions of the Chitwan National Park which is gaining popularity in recent years.

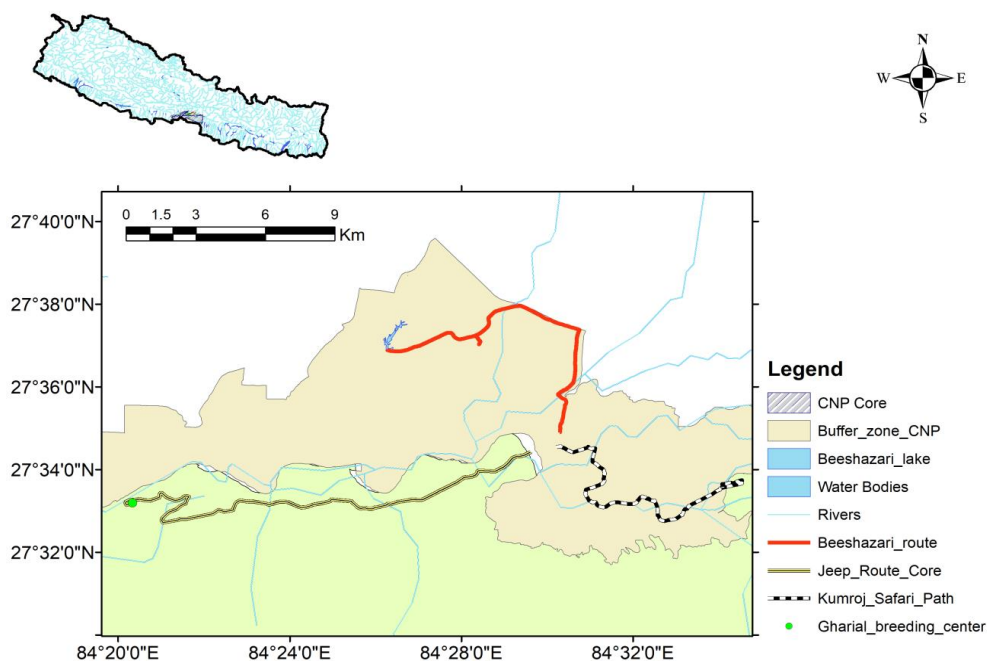


Figure 1: Map of the study area showing three most popular Jeep Safari Paths in CNP

Methodology

The study is based on field observations and an online survey. After participatory observation of the Jeep Safari in three locations in Chitwan National Park (Kumroj Buffer Zone Community Forest, Core Area of Chitwan National Park, and Beeshazai Lake), a questionnaire was prepared in Google Forms. Two different sections were made for the general description and perception of the respondents about the jeep safari experiences. The section related to the general description of the visitors contained questions related to the gender of the respondents, ethnic group, geography, and average family income. In the second section, questions related to the time and site of the Jeep safari were done at the Chitwan National Park and its buffer zone and included information on the names of the birds and animals observed. Furthermore, on the five-point Likert scale, visitors were asked to express their perceptions about their experience with the nature guide, the impact of Jeep Safari on wildlife, and their level of satisfaction with the Jeep Safari experience. Visitors who had previously attended a Jeep Safari in other protected areas in Nepal were asked to compare their experience with CNP. They were also asked to express their opinion on the cost they paid for the Jeep Safari as low, moderate, or high, and about the overall management as poor, satisfactory, or good. The opinion of visitors on a potential night safari was also sought. An open-ended question was kept at the end to provide suggestions for the management authority. After thorough examination of the questions, the form was distributed through social media such as Facebook and Twitter. A time-limited survey was conducted, and respondents were asked to complete the survey form within 25 days (April 1st to 25th, 2020). A post was made on the personal facebook account of the author on April 1st, 2020 requesting the people, with experience of Jeep Safari in any location of Chitwan National Park and buffer zone, to participate in the survey. For those who suggested using email for correspondence, an email address was collected from them and email communication was made. The follow up post and email correspondence, as reminder, was done on the 10th of April, 2020. The collected data were explored and analyzed using descriptive statistics in Microsoft Excel. Chi-square test was used to assess the association between the variables and in case of significant relationship Cramer's V was calculated to determine the magnitude of association. All the statistical analysis was performed using JASP Software.

Results

General characteristics of the respondents

During the time allocated for the survey, response was received from a total of 85 respondents. The average age of the respondents was 24.1 (min = 20, max = 41, S.D. = 3.754).

Table 1: General Characteristics of the respondents who participated in the survey

SN	Attributes	Proportion of Respondents
1	Gender	
	Male	49.4%
	Female	50.6%
2	Geography	
	Mountain	8.2%
	Hills	69.4%
	Terai	22.4%
3	Ethnic Group	
	Khas/Arya	83.5%
	Mangol	11.8%
	Madheshi	3.5%
	Other	1.2%
4	Education	
	Higher Secondary	37.6%
	Bachelor's Degree	41.2%
	Masters and Above	21.2%
5	Average family Income	
	Below 25000	8.2%
	25,000 - 50,000	36.5%
	50,000-75,000	34.1%
	75,000+	21.2%

Experiences and opinions

Of the total respondents 60% of the respondents have done Jeep Safari at Beeshazari Lake, 45.9% at Kumroj Buffer Zone Community Forest and 27.1% have done Safari at the Core Area of the Chitwan National Park. Jeep safaris are predominantly done in the morning or evening (Table 2).

Table 2: The time period during which the visitors get involved in Jeep Safari

Time of visit	Proportion of respondents
Morning (7-12)	36.50%
Day time (12-15)	28.20%
Evening (15-18)	35.30%

The Greater one horned rhinoceros (*Rhinoceros unicornis*, Linnaeus, 1758) and Spotted Deer (*Axis axis*, Erxleben, 1777) were reported by majority of respondents, followed by Sambar (*Rusa unicolor*, Kerr, 1792) and Wild Boar (*Sus scrofa*, Linnaeus, 1758) (Figure 2). Lesser Adjutant (*Leptoptilos javanicus*), Peafowl (*Pavo cristatus*), Great Cormorant (*Phalacrocorax carbo*), Little Cormorant (*Microcarbo niger*), Serpent Eagle (*Spilornis cheela*), and Ruddy Shelduck (*Tadorna ferruginea*) were the major birds that were observed by the respondents during the Jeep Safari.

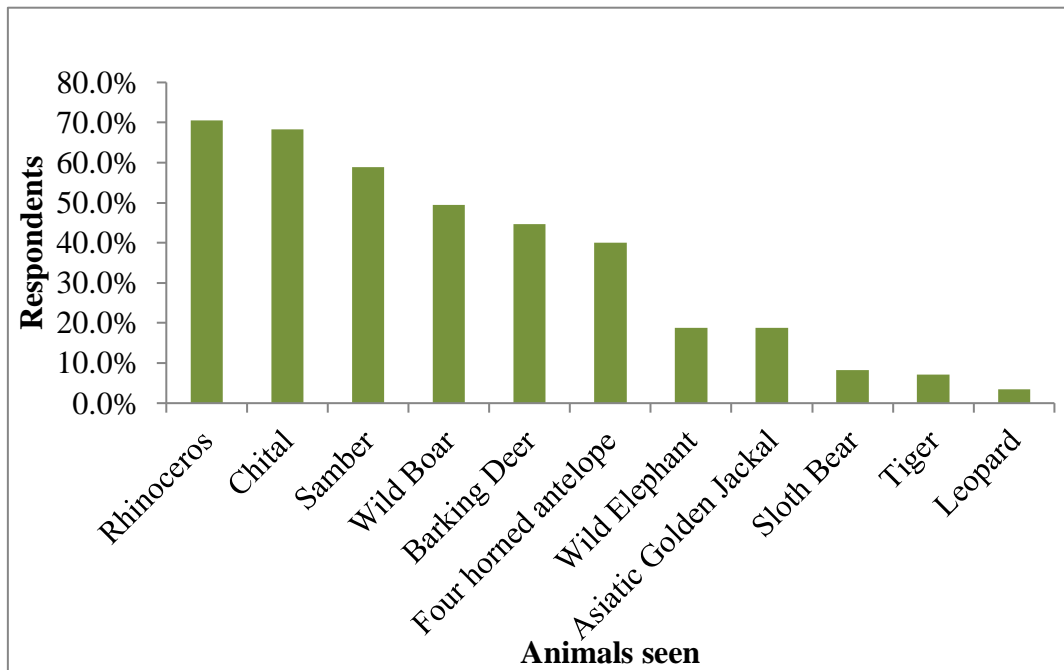


Figure 2: The fraction of the respondents who have claimed to observe different animals

In the case of CNP, there is provision to keep one nature guide compulsorily in each Jeep for Jeep Safari. The majority of visitors rate their experience with the nature guide they travel with as moderate to very high quality, with 5% reporting a very low or low quality experience (Figure 3). Furthermore, the fraction of respondents who perceive that the number of Jeep during safari were moderate to high were higher (Figure 4).

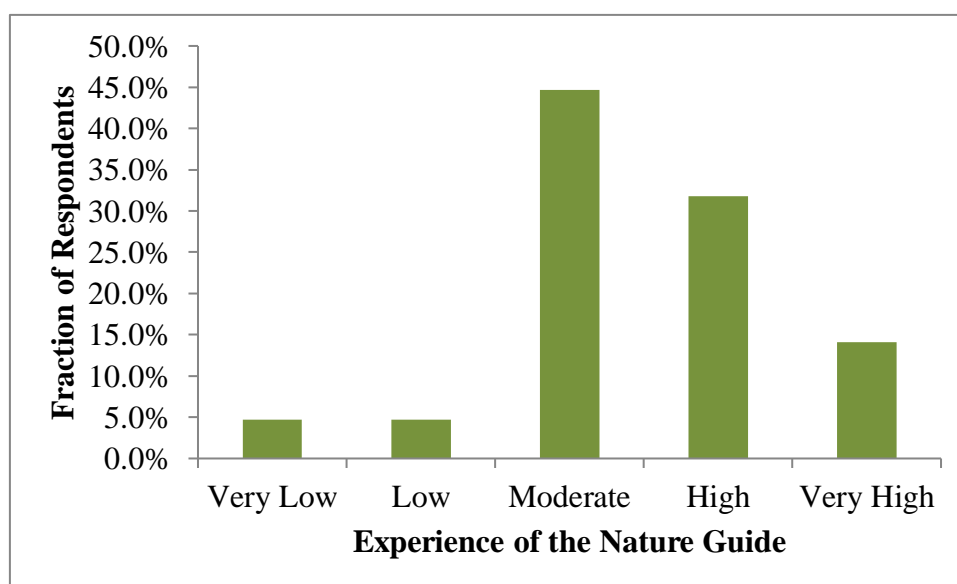


Figure 3: Response of the respondents about the experience of the nature guide

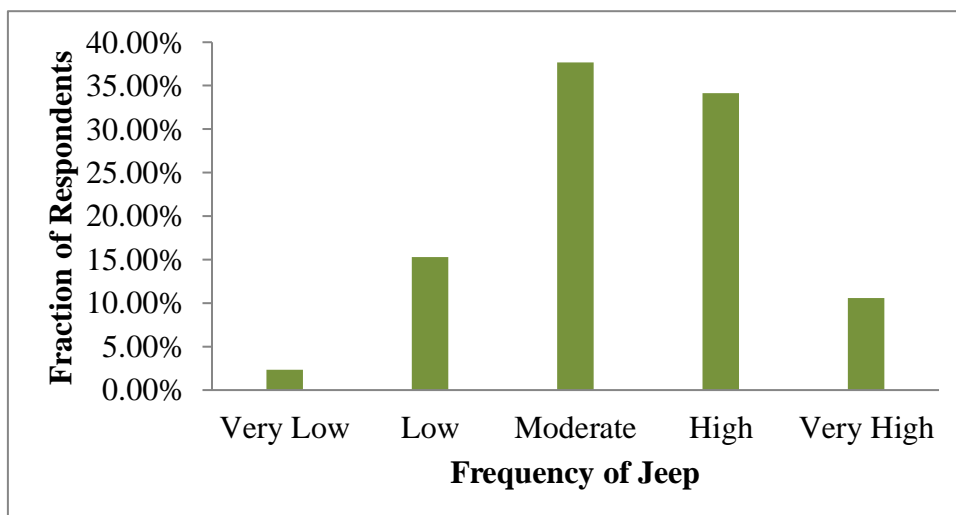


Figure 4: Response of respondents about the frequency of the Jeep

The fraction of the respondents who believe that the price charged for the Jeep Safari is reasonable for the Beeshazari and Kumroj is higher, while in the case of the Core Area, the majority of the respondents are of the opinion that the charge is high (Table 3).

Table 3: Response of the respondents about the price of the Jeep Safari Charged to the respondents

Opinion on Cost	Site		
	Beeshazari (n=62)	Kumroj (n=50)	Core (n=35)
Low	3.23%	0.00%	2.86%
Reasonable	74.19%	64.00%	42.86%
High	22.58%	36.00%	54.29%

The management of the Jeep Safari was found to be satisfactory as per the responses of the respondents (Figure 5).

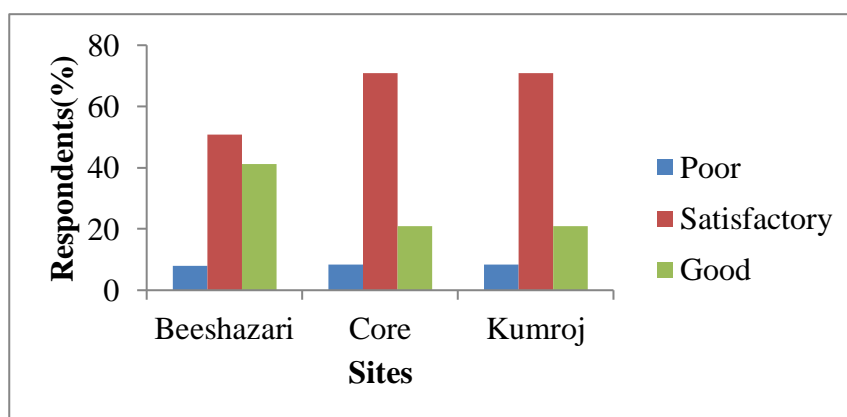


Figure 5: Response of the respondents about their opinion about Safari Management at three sites at Chitwan National Park

Majority of the respondents (57.65%) were satisfied with the experience of the Jeep Safari while small fractions (15.29%) of the respondents were unsatisfied while the rest (27.06%) expressed neutral feelings about the satisfaction. Marginal level of significance was reported between the geographic origin of the respondents and satisfaction ($\chi^2=9.220$, $N=85$, $df=4$, $p=0.056$). The value of Cramer's V for the geographic origin of the respondents and satisfaction is 0.233.

Of the total 85 respondents, fourteen respondents have done jeep safari at other protected areas of Nepal of which nine of them have experienced at Bardiya National Park, one person at Koshi Tappu Wildlife Reserve and four persons have experienced jeep safari at Sukhlaphanta National Park. Seven of them reported the experience of a Jeep safari to be similar between CNP and other parks, while five respondents found the experience to be better at CNP and three enjoyed other protected areas more than CNP.

The majority of the respondents believe that the jeep safaris are having a negative impact on the wildlife of Chitwan National Park and its buffer zone (Table 4). The perception about the impact of jeep safari on tourism significantly differed according to the occupation of the respondents ($\chi^2=103.858$, $N=85$, $df=16$, $p<0.01$, Cramer's V = 0.553).

Table 4: Opinion of the respondents about the impact of the Jeep Safari on wildlife of CNP and its buffer zone

Response	Fraction of Respondents
Strong Positive	1.18%
Positive	5.88%
Neutral	18.82%
Negative	68.24%
Strong Negative	5.88%

The proportion of respondents who believed that night safari activities should be avoided because they could have serious negative consequences for wildlife was significantly higher (Table 5). The opinion of the respondents on the night safari was found to be significantly associated with their perception about the impact of jeep safari on wildlife ($\chi^2=41.959$, $N=85$, $df=20$, $p=0.03$, Cramer's V = 0.351).

Table 5: Fractions of respondents with different opinion about the discussed night safari activities in CNP

Opinion on Night Safari	Fraction of Respondents
Will have strong negative influence on wildlife, so government should not endorse	74.12%
No idea on impact on wildlife, so neutral	11.76%
Can be new experience to the visitors, so government should endorse it	10.59%
Night Safaris could be new experience but it should be proceeded by addressing the impact on wildlife	2.35%
Could be new experience, but no idea on impact on wildlife	1.18%

Suggestion to the management authority

Out of the total respondents (n = 85), 49 respondents provided suggestions to the respondents. The majority of the respondents (25%) have suggested reducing crowding in the jeep safari, followed by the maintenance vehicles (Figure 6).

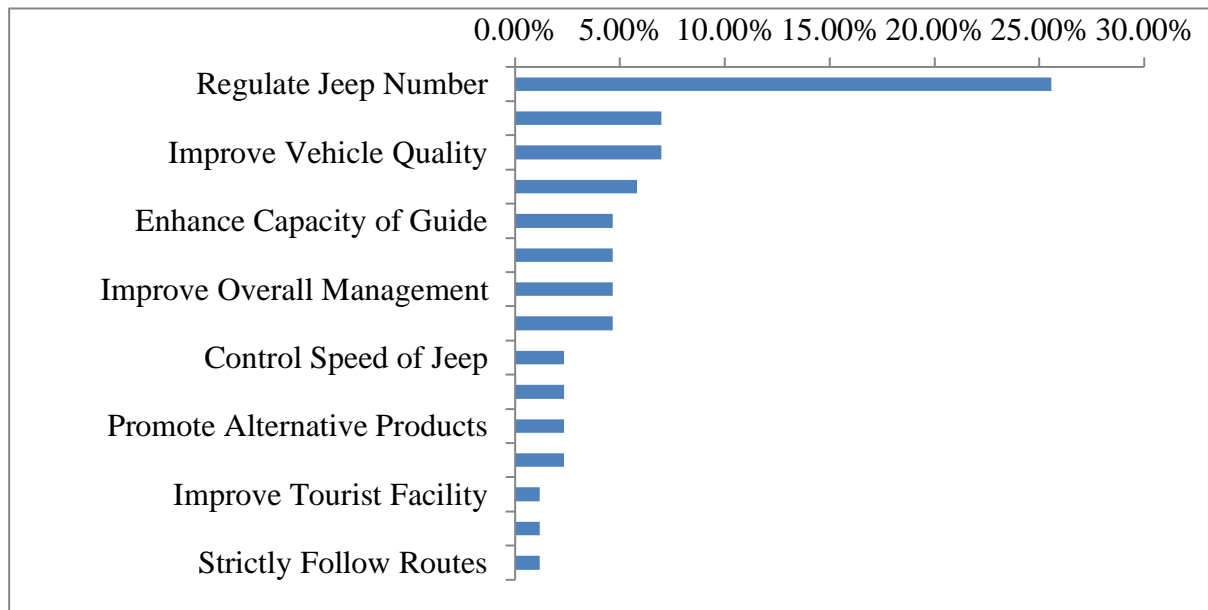


Figure 6: Suggestion by the visitors and fraction of respondents supporting that suggestion

Discussion

Wildlife tourism can be an important tool for diversifying local people's livelihoods and decreasing their reliance on directly collected goods from protected areas (Lekgau & Tichaawa 2020) in case of the protected areas from lowland Nepal where people have limited access to the natural resources of Park. Jeep safaris are a popular form of wildlife tourism in Chitwan National Park in recent years. However, evaluation of jeep safari through the customer's eye was lacking. This research is the outcome of the collection and analysis of experience and opinion of visitors, their perception about the financial and managerial aspect of jeep safari and opinion about the informally discussed night safari at the park.

Three destinations, Beeshazari Lake (Beeshazari), Kumroj Buffer Zone Community Forest (Kumroj) and Core Area were used as the Jeep Safari destination where jeeps get operated from Sauraha area and periphery. Among these three locations Beeshazari and Kumroj were found to be more popular than the core area. Among these three locations, Core areas take nearly double time, cost is higher and the available quota is lower compared to other two destinations. This might provide a potential explanation for the lower fraction of tourists visiting the core area. This is supported by the response of the respondents where more than half of the respondents visiting the core area refer to the price to be higher in core areas.

The percentage of visitors who go on a Jeep Safari in the morning and evening is higher than during the day. Majority of the animals are found to be active during dusk and dawn, increasing the possibility of an encounter. Thus, the tour operators choose those times to take the visitors on their visit.

Greater One Horned Rhinoceros and Spotted Deer were reported to be observed by more than 70% of the respondents. Chitwan National Park is home to 694 individuals of rhino (CNP 2021). Furthermore, the size of the rhino increases the ease of observing the species from greater distances during the Jeep Safari. In addition, rhinos often are found to be either grazing on grassland or wallowing in the mud, swamps or ponds. These more or less predictable activity patterns increase the possibility for the visitors to observe the species. In CNP, the density of the spotted deer was 74.45 (± 12.1) individuals per square kilometer, which is the highest among all the ungulates at CNP (DNPWC and DOFSC 2022).

Leopards are active during the late evening, while tigers are more elusive in nature, meaning the chances of viewing them during the Jeep Safari are very low. The ability to observe large mammals in protected areas is critical for increasing market demand for wildlife tourist destinations (Arbieu et al. 2018). Direct exposure to wildlife has been found to be critical in developing pro-conservation behavior in visitors and in generating conservation support (Skibins, Powell & Hallo 2013). As visitors observe a variety of species during Jeep Safari experiences, we can expect pro-conservation behavior in tourists visiting CNP, and we can drive support for their conservation, which requires further investigation.

Chitwan National Park is famous for its avifaunal diversity. The park is home to 546 species of birds (CNP 2021). However, it is not possible to observe each and every bird or remember them during the Jeep safari. The species reported by the visitors are either the large birds or the ones that are migratory, or those that are given special emphasis by the guides or other visitors due to some unique property providing the plausible explanation for wider reporting.

Majority of the visitors reported the experience of the nature guide to be either moderate or high. There are reports of the crucial role of wildlife guides in developing the stewardship of visitors towards wildlife conservation, particularly in wildlife tourism activities conducted in small groups (Curtin & Kragh 2014). High to moderate level of satisfaction of visitors to the experience of nature guides indicates the role they are playing. Park authority and other concerned stakeholders should make their investment in capacity building of the guide to lure the tourism activities for the benefit of conservation. This includes training on the methods of identification of the birds and mammals that are observed during the Jeep Safari. Interpersonal skills and communication are some of the other aspects that can be enhanced.

Except for the core area, where charges are nearly double what they have to pay for Beeshazari and Kumroj, visitors have said that the costs are reasonable. Studies have shown that satisfaction with prices charged for the services in the parks is related to the overall satisfaction of the tourist in wildlife tourism (Mutanga et al.

2017). With regard to the overall management, the fraction of the respondents who think the management is up to the mark is lower in the case of Core Area and Kumroj CF. Concerned authorities should look to continuously improve the management of the Jeep Safari operation. This is supported by the fraction of the respondents satisfied with their Jeep safari experience: slightly more than half are satisfied, while nearly one third expressed dissatisfaction. The proportions of respondents who had done jeep safari in other locations were insufficient to allow for comparisons of the experiences. Visitors' satisfactions are the key to sustainable business operations in most tourism activities, including wildlife tourism (Newsome et al. 2019). The visitors' satisfactions are partially explained by the geography of origin of respondents. Studies have indicated that culture has a great influence on how tourists evaluate the tourism products (de Carlos et al. 2019). Nepal is a land of cultural diversity and geography has a great influence on the culture. Thus, the cultural differences of the visitors could provide the plausible explanation of the association between the satisfaction of tourists and geography. Service quality and overall experience could be other explanatory factors for tourist satisfaction. A total of 90% respondents have reported the jeep frequency to be moderate to very high. Heavy traffic congestion in the highly visited parks is the major reason behind the dissatisfaction of visitors to the popular wildlife tourist destinations (Prakash et al. 2019).

Wildlife tourism is sometimes praised for raising public awareness about wildlife and raising funds for conservation, while it is also chastised for negatively impacting the ecology of wildlife species (Larm et al. 2018). Higher fractions of the respondents in this study perceived that Jeep Safari was having a negative impact on the wild animals. Similar reports are reported by earlier research in Nepal as well, which reports: "There are unethical practices of viewing the wildlife from a distance less than prescribed that are reported to have a negative impact on the wildlife" (Subedi 1999), in addition to the increased safety risk for the visitors. The tourists' desire for closer encounters with wildlife, which is encouraged by professional guides for personal gain, has a negative impact on many wildlife species (Valentine & Birtles 2004). The behavior of the tourists and the jeeps can be controlled by conducting the appropriate educational interventions (Tarver et al. 2019). The opinions about the impact of Jeep Safari on wildlife tourism are associated with the occupation of the respondents. Though not explored in the study, the motives of the visit could differ significantly according to the occupation and thus, their views on the impact of tourism on wildlife.

The fraction of the respondents who support the night safari at CNP is less than 15% of the total, indicating the low demand. Furthermore, the perception about the impact of Jeep Safari on Wildlife and perception about the decision to initiate night safari were significantly associated. This implies that people are opposing the decision to initiate night safari with the environmental concern in mind. Chitwan National Park is home to elusive and endangered species like the Royal Bengal Tiger and others. If we promote night safaris, the activity of such species may be impacted. It would be better if the decisions were made keeping the ecological

consequences in mind. Stakeholders should be able to design, implement, and monitor appropriate management actions to ensure the sustainability of wildlife tourism (Higginbottom, Green & Northrope 2003).

Most of the suggestions received from the respondents are related to the operation of the Jeep Safari in the area. Crowding is one of the most frequently mentioned issues, with more than one-quarter of respondents suggesting that the Jeep number be limited. The number can be regulated by increasing the price of the Jeep Safari while reducing the number of Jeep Safaris operated in the park. This will alleviate the problem of overcrowding among Jeep Safari visitors without significantly reducing revenue generated. A study has suggested that doubling the entry fee in the Chitwan National Park is projected to decrease visitors by less than a quarter while increasing revenue by nearly two thirds (Pandit, Dhakal & Polyakov 2015). This implies that interplay between price and number can be beneficial for the better jeep experiences within the buffer zones and core area of Chitwan National Park and can contribute to manage crowding within the Park in a sustainable manner.

As this result is based on the stated responses by the limited groups of people, there are certain limitations associated with this study. First, the study is primarily based on the perception expressed by the respondents based on the recall of the past experiences. Furthermore, as the data were collected during lockdown where the movement of the people was extremely restricted, the data were collected using social media and emails. As such, few of the opinions expressed by the respondents might not capture the response of all of those who have experienced Jeep Safari. Furthermore, all the respondents were Nepali meaning the response should not be generalized as the opinion of all the visitors of CNP with jeep safari experience.

Conclusion

Jeep safari has been proactively used in the Buffer Zones (Beeshazari Lake Area, Namuna Buffer Zone Community Forest and Kumroj Buffer Zone Community Forest) and Core Area (Rapti River bank in Sauraha to Gharial Breeding Center) of the CNP and its buffer zone for providing natural experiences to the visitors and is one of the popular tourism promotion activity of Chitwan. Jeep Safari can generate a significant amount of revenue that can be channeled to fund conservation actions of the local government. This article, based on experiences of visitors who participated in the Jeep Safari activities, revealed that megafauna, particularly large mammals and birds, were observed and valued by domestic tourists. Furthermore, the visitors were satisfied with regard to their experiences on the Jeep Safari and overall management. However, the park authority should rethink the night safari that sometimes emerged in the discussion. Furthermore, crowd control and capacity building for the nature guide are two aspects that the concerned authority should work on to enhance the visitors' experience. Findings of this study potentially help the local authorities in amending policies related to the jeep safari at CNP and other similar parks at other locations.

Conflict of interest statement

Author would like to declare no conflict of interest.

Acknowledgements

The process of field observation, tool preparation, and data collection for this particular research was not possible without the help of my colleagues, students, and different stakeholders. I would like to express my gratitude to all those who directly helped me during all those phases. Ganesh Shrestha, Chairman of Kumroj Buffer Zone Community Forest and staff of Kumroj and Shristi Shrestha and Manoj Neupane helped during field observation. Prakash Chandra Aryal and team members of Environment Protection and Study Center (ENPROSC) helped logistically, thus, I would like to express my deep gratitude. The contribution of Som Nath Adhikari and Narayan Niraula, Binit Timilsina, Ramesh Kathariya along with students from the Department of Environmental Science at Tri-Chandra Multiple Campus from the 2016-2018 and 2017-2020 batches are the ones that require special mention. Furthermore, the faculties and students of Padma Kanya Multiple Campus are worth mentioning. Last but not the least, the suggestion and comments of the editor and anonymous reviewer helped to bring this article to this shape, I would like to express my sincere thanks to them as well.

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