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Nepal Mountain Academy

(Affiliated to Tribhuvan University)
Thapa Gaun, Bijulibazar, Kathmandu

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Editorial

Journal of Nepal Mountain Academy is purely an official publication. As part of NMA's regular academic exercises, it has planned to publish an academic journal annually focusing on the adventures and mountaineering. It has aimed at promoting researches in tourism activities among the researchers, college and university professors, graduate and undergraduate students, personnel in administrative positions involved in research ventures, and academicians/ professionals immersed in the tourism sectors. As obvious from the title of the journal, mainly research articles from the field of tourism, adventure, mountain science, and mountaineering are preferred for publication.

The articles published in this journal in all its issues are from mountaineering, adventure, trekking and general tourism area. The articles were assigned for peer review to the professors and practitioners in their respective fields, amendments were recommended followed by editing corrections ensured before they were processed for publication.

However, the editorial team does not bear any responsibility for any incongruences in contents and patterns presented in the articles as they are purely the products of their authors, and hence, the authors are subject to ethical interrogations in the circumstances that are marked to violate ethical parameters applicable in the field of academics and research.

The articles have been arranged in alphabetical order of the authors' name. Researchers and readers are welcome for their any kind of scholarly inquiries and suggestions.

Thank You

Prof. Ramesh Kumar Bajracharya, PhD

Chief Editor

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Nexus between Tourism Industry and Economic Growth of Nepal

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Abstract

The tourism sector is essential to economic growth and has the capacity to stimulate the economy. The aim of this paper to assess the relationship between tourism industry and its economic growth. The gross domestic product (GDP) indicates the economic growth and tourism industry development relates to tourist arrivals, length of stay, and gross foreign exchange earnings from tourism. This study is grounded on secondary data collected from the Economic Survey of Nepal and the Nepal Tourism Statistics from 2000 to 2021. The study finds short and long-term causality between tourism industry and economic growth. The tourism development indicators include arrivals of tourist, length of stay, and gross foreign exchange from tourism. The unidirectional causality of economic growth to the length of stay of tourists and tourism to gross foreign exchange earnings were observed in the study. Adequate government strategies for the tourism sector can accelerate economic growth. The policymakers should give adequate attention to diversifying the tourism services, improving infrastructure, encouraging local communities, promoting sustainable tourism, enhancing marketing efforts, and promoting collaborations between the public, commercial sectors and local communities to support tourism industry for the sustained in Nepal.

Keywords: economic growth, sustainable tourism, tourist arrivals, the tourism industry

Introduction

Tourism is a significant economic driver in the world economy (Ekeocha et al., 2021; Jucan & Jucan, 2013; Rogerson, 2002). It is one of the fast growing industries helping to generate significant income, support economic growth, and create jobs (Dwyer et al., 2009; Zadeh Bazargani & Kiliç, 2021). Global tourism is growing due to rising money and improved air connections (Campante & Yanagizawa-Drott, 2018). This industry can boost the GDP, output, foreign exchange, social and cultural development, investment, and other elements (Usmani et al., 2021). Tourism creates a new avenue for global trade, ultimately impacting the GDP (Fayissa et al., 2008; Manzoor et al., 2019).

One of Nepal's primary economic drivers is tourism. It is a substantial source of income and foreign currency. Nepal is a popular destination for mountaineers, rock climbers, and adventure seekers because eight of the world's top ten mountains are in Nepal. The country of Nepal's Hindu, Buddhist, and other cultural heritage sites, as well as its year-round pleasant weather, are also major draws (MFFA, 2022). Due to the abundance of natural and historical monuments, Nepal has great potential for developing tourism (Acharya & Halpenny, 2013; Bhattarai & Karmacharya, 2022).

Additionally, Nepal has a diverse population regarding religion, culture, and biodiversity. Nepal has a distinct and rich cultural legacy, both material and immaterial. These factors

combine to make Nepal a desirable travel destination (Ghimire, 2019; Pradhan et al., 2022). Only after 1962, when the country's first tourism statistics were kept track of, were foreign visitors to Nepal officially documented (Stevens, 1988). As per the tourism statistics 2021, tourist arrival in 1962 was 6,179, which reached 41.25 times higher (254,885) in 1990 and 1,812.14 times higher (1,1197,191) in 2019. The global travel and tourism industry has been significantly impacted by COVID 19. As a result, tourist arrivals in Nepal were 230,085 and 150,962, respectively, in 2020 and 2021. It was almost 80.78% less in 2020 and 34.3% less than the previous year. The tourist arrivals in Nepal from five major countries are India (42.8%), the USA (15.13%), the U.K. (5.7%), China (4.1%), and Bangladesh (3.3%), respectively. Of the total international arrivals, 150,625 (99.7%) arrived by air, and 337 (0.3%) arrived by road (MoCTCA, 2021).

An alternative export that can help a nation's balance of payments, support employment, and increase tax revenue is tourist expenditure (Durbarry, 2002; Khan et al., 1990). Nepal's tourism sector supports 371,140 employees, 11.5% of all workers across all sectors of the economy (Kathmandu Post, 2021 June 17). The Nepal Tourism Board was founded by the government of Nepal to advance, promote, and expand the tourism sector in Nepal (NTB, 2023). The national tourism strategic plan, 2016–2025 is being implemented by the government (MoCTCA, 2016). The government of Nepal has made attempts to increase tourism, although it still only accounts for a small share of the country's overall GDP (Bhattarai & Conway, 2021).

The development of Nepal's tourism industry has faced several obstacles, including socio-political problems that were followed by a protracted period of political transition, among other things, natural calamities (such as the 2015 earthquake) and COVID 19, which negatively impacted foreign visitors to Nepal (Kc et al., 2021; Shivakoti, 2021). Low levels of arrivals and low daily expenditure per visitor are the main issues with Nepalese tourism (Badal, 2019; Kc et al., 2021; Shivakoti, 2021). However, Nepal has consistently attempted to grow its part of the global tourism industry with a number of marketing initiatives, such as Visit Nepal - 1998, Nepal Tourism Year - 2011, and Visit Nepal - 2020 (Badal, 2019; Paudel et al., 2021). Due to the significant policy implications, the causal connection between tourism-related income and economic growth in emerging nations has attracted the attention of economists. The basic approach of the paper is to assess the nexus between the tourism industry and economic growth with reference to Nepal.

Literature review

On theoretical and empirical grounds, there is still a debate about whether economic activity stimulates tourism, or whether tourism expansion stimulates economic activity. Theoretically, economies expand faster than average in nations with comparatively large tourism industries (Antonakakis et al., 2015; Seetanah, 2011). It was shown that nations with comparatively abundant natural resources will concentrate in tourism and experience a higher rate of economic growth in that field, which is known as tourism (Sequeira & Maças Nunes, 2008). Both developed and developing countries are positively affected by tourism, with the effects on growth in developing countries being noticeably greater (Salmani et al., 2014; Seetanah, 2011).

Although, there have been tourists throughout human history, the assumption that tourism is a relatively new phenomenon is generally recognized in tourism theory (Munar, 2006).

According to the tourism-led growth paradigm, long-term economic growth is mostly determined by tourism exports (Brida et al., 2016; Song & Wu, 2022). More people are becoming aware of the significance of tourism for the expansion and development of the economy (Calero & Turner, 2020; Durbarray, 2004). The growth of a global society is significantly aided by tourism (Munar, 2006).

In general, it is believed that emerging nations' economies will benefit from the growth of international tourism. International tourism positively impacts a nation's economic growth (Skerritt & Huybers, 2005; Wu et al., 2022). The tourism industry and GDP are causally related (Akadiri & Akadiri, 2021; Arslanturk et al., 2011; Rasool & Johari, 2021; Razzaq et al., 2023). Tourism revenue and GDP have both a short-term dynamic and long-term cointegrating relationship (Gautam, 2011). Promoting travel and tourism can help countries earn foreign currency, create jobs, build capital, and achieve economic independence (Apostolopoulos et al., 1996; Du et al., 2016; Nepal et al., 2019).

A country's economy may significantly benefit from tourist spending, which is seen as an alternative to exports and gains in foreign exchange and revenue from the expansion of the tourism sector help to balance of payments (Durbarray, 2004; Seetanah, 2011). Foreign exchange earnings from tourism can subsequently be used to import capital goods to produce goods and services, which encourages economic growth (Mahmoudinia et al., 2011; Ranasinghe & Sugandhika, 2018). Tax revenues, employment opportunities, and new income sources are other economic advantages associated with tourism (Dwyer, 2022; Zaei & Zaei, 2013). The local population believes the tourism industry has significantly boosted their economy (Jaafar et al., 2013; Lawson et al., 1998).

Tourist arrivals and revenue from tourism have a long-term association with economic growth (Naseem, 2021). There is a reciprocal relationship between tourism receipts and GDP (Kumar et al., 2015; Paudyal, 2012). Tourism revenue and economic growth are causally related in both directions, indicating that these two factors are linked, and tourism development stimulates economic progress (Ohlan, 2017; Rasool & Johari, 2021). Tourism's foreign exchange earnings help offset the adverse balance of payments (Sugiyarto et al., 2003).

Material and method

The relationship between tourism industry and its economic growth is investigated in this study. The economic growth is specifically examined as a GDP in connection to tourist arrivals (TA), length of stay (LS), and gross foreign exchange earnings from tourism (GFET). This analysis is supported by secondary data from the Economic Survey of Nepal and the Nepal Tourism Statistics. The data set includes in this study is from 2000 to 2021. Each variable's name, abbreviation, and description are listed in Table 1.

Table 1

Variables and descriptions

Variable Names	Acronyms	Description
Gross Domestic Product	GDP	It assesses a country's economic development. It is a dependent variable and is used as a growth rate.
Tourist Arrivals	TA	It measures how many tourists come to the nation each year.

Length of Stay	LS	It measures the length of stay of tourists.
Gross Foreign Exchange Earnings from Tourism	GFET	It measures the income generated from the tourism industry.

The econometric analysis (Unit root test, Granger causality test, Johnson cointegration test, and VAR model) was used to analyse the relationship between tourism industry and its economic growth of Nepal. Further, the study checked all the assumptions for the model's validity. The following hypotheses have been used to assess the connection between the tourism industry and economic growth:

H₁: There is a causality in short-term between GDP and arrivals of tourist, length of stay, and gross foreign exchange earnings from tourism.

H₂: There is a causality in long-term between GDP and arrivals of tourist, length of stay, and gross foreign exchange earnings from tourism.

Results

Stationarity is crucial for time series data (Leybourne et al., 1996). The unit root test summary is presented in Table 2.

Table 2

Summary of Unit Root Tests

Variables	Level	First Difference	Degree of Integration
GDP	-4.6395 (0.0019***)	-----	I (0)
TA	-1.7929 (0.3734)	-5.5260 (0.0004***)	I (1)
LS	-0.2551 (0.9150)	9.3562 (0.0000) ***	I (1)
GFET	-1.4763 (0.5256)	-3.5135 (0.0186)	I (1)

Source: Authors' calculation using Eviews software Version 10.

****denote significance at a 1 percent significance level. Lag=3*

When the P-value is significant at a 1% significance level, GDP is shown in Table 2 at level I (0). All the independent variables- TA, LS, and GFET are insignificant at level I(0) and became stationary after the first differences, as indicated by I (1).

Granger (1969) devised a systematic approach to examine the causal connection between variables. The Granger causality test for pairs is shown in Table 3.

Table 3

Pairwise Granger Causality Test

Null Hypothesis	Obs	F-Statistic	Prob.
GDP is not Granger caused by TA	17	0.87466	0.5195
TA is not Granger cause by GDP		0.69038	0.6189

GDP is not Granger caused by LS LS is not Granger caused by GDP	17	0.27575 5.46376	0.8856 0.0203**
GDP is not Granger caused by GFET GFET is not Granger caused by GDP	16	0.10631 8.75347	0.9766 0.0074***
TA is not Granger caused by LS LS is not Granger caused by TA	17	3.01658 5.32481	0.0860 0.0217**
TA is not Granger caused by GFET GFET is not Granger caused by TA	16	0.91385 3.05464	0.5057 0.0941
LS is not Granger caused by GFET GFET is not Granger caused by LS	16	6.44178 0.97128	0.0169** 0.4797

Source: Authors' calculation using Eviews software Version 10.

** denotes five percent and *** denotes one percent level of significance.

Note: Sample: 2000 2021; Lags: 4

Table 3 shows unidirectional causality from GDP to LS, GDP to GFET, TA to LS, and GFET to LS. Tourism-related gross foreign exchange earnings and length of stay of tourists have a short-term causal relationship with economic growth. Likewise, the length of stay and gross foreign exchange earnings have a short-term causal relationship.

A cointegration test is used to determine whether there is a long-term link between different time series (Enders & Siklos, 2001). Table 4 shows the Johnson cointegration test.

Table 4

Johnson Cointegration Test

Hypothesized No. of CE(s)	Trace Statistics	Prob.	Max-Eigen Statistics	Prob.
None	69.04360	0.0002***	27.74851	0.0476**
At most 1	41.29509	0.0016***	22.63301	0.0305**
At most 2	18.66208	0.0161**	16.76058	0.0197***
At most 3	1.901493	0.1679	1.901493	0.1679

Series: GDP TA LS GFET

Source: Authors' calculation using Eviews software Version 10.

* Asymptotic Chi-square distribution is used to compute probabilities

** represents a five percent significance level, and***denotes a one percent significance level.

Note: Sample: 2000 2021; Included observations: 176, Linear deterministic trend

According to Table 4, based on both trace statistics and the maximum Eigenvalue statistic, there are at most three cointegrating equations among the research variables at the 5% level. We proceed with the VECM approach to estimate the error correction coefficients since the test implies that cointegrated time series data contain an error-correction representation that reflects the long-term adjustment process.

Vector Error Correction Model (VECM)

There is cointegration among all the variables, hence it has been determined whether there is a long-run association using the VECM model (standard VAR) or not. To calculate VECM,

the following equation has been developed:

$$\text{GDP} = C(1)*\text{GDP}(-1) + C(2)*\text{GDP}(-2) + C(3)*\text{GDP}(-3) + C(4)*\text{TA1}(-1) + C(5)*\text{TA1}(-2) + C(6)*\text{TA1}(-3) + C(7)*\text{LS1}(-1) + C(8)*\text{LS1}(-2) + C(9)*\text{LS1}(-3) + C(10)*\text{GFET1}(-1) + C(11)*\text{GFET1}(-2) + C(12)*\text{GFET1}(-3) + C(13)$$

The result shows the coefficient is negative, and the p-value is significant for the model (shown in the appendix). It suggests a long-run association between GDP to TA, LS, and GFET.

Additionally, the Wald test statistics have been used to calculate the short-term joint effects of the independent factors on the dependent variables. There is no short-run causation between the independent and dependent variables if the null hypothesis is accepted. For short-term relationships, the following null hypothesis has been developed.

The null hypothesis is that $C(4) = C(5) = C(6) = C(7) = C(8) = C(9) = C(10) = C(11) = C(12) = 0$.

The results of the Wald test statistics are shown in Table 5.

Table 5

The Wald Test Statistic

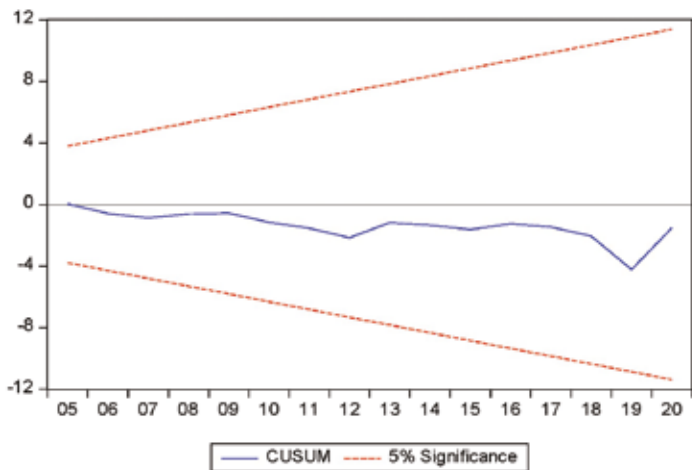
Test Statistic	Value	df	Probability
Chi-square	18.5864	9	0.0289

Source: Authors' calculation using Eviews software Version 10.

Table 5 shows that the null hypothesis is rejected, indicating a short-run causal relationship between GDP and other independent variables.

Figure 1

Stability Test of the Model



Source: Authors' calculation using Eviews software Version 10.

Using the CUSUM test to assess the model's stability, the CUSUM test results are shown in Figure 1.

The curve line (coloured blue in the figure) is situated between two red lines, as is evident. If the blue line at a 5% significance level is confined between two red lines, the model is stable.

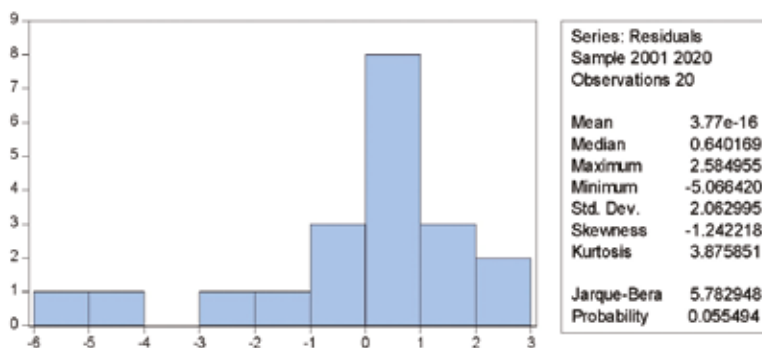
Diagnostic Test of Residuals

The residual must have homoscedasticity, be normally distributed, and lack serial correlation for the model to be further validated. The regression model's underlying premise is laid down below.

The model's results violate the central limit theorem's assumption if the residuals are not normally distributed. Thus, the regression findings are no longer reliable. To determine whether the model is normal, the Jarque-Bera test has been run to evaluate the model's normality. (Akanbi et al., 2020). The outcome of the model's normality test is depicted in Figure 2.

Figure 2

Normality Test of the Model



Source: Authors' calculation using Eviews software Version 10.

The normality test is performed to verify whether the residual from the model is normally distributed or not, reflected in Figure 2. The Jarque-Bera statistics are 5.7829, and the failure to reject the null hypothesis is indicated by the p-value of 0.0554. It implies that residuals have a normal distribution, supporting the model's assumption.

The Breusch Pagan test has been run to verify the homoscedasticity assumption. The residual must be homoscedastic for the model to be more accurate. If the probability value is greater than 5%, there is enough evidence to conclude that the residuals are homoscedastic (Akanbi et al., 2020).

Table 6

Breusch-Pagan Tests

Tests	Statistic	Prob.
Breusch-Godfrey Serial Correlation LM	1.4483	0.1801
Breusch-Pagan Godfrey	0.6259	0.6086
Autocorrelation	11.149	0.516

Source: Authors' calculation using Eviews software Version 10.

Table 6 demonstrates that the p-value above the significance level of 5%, allowing us to accept the null hypothesis. It suggests that residuals are homoscedastic and have no serial correlation and autocorrelation that validates the model's assumption (Lenka & Bairwa, 2016).

Discussion

The tourism sector has the potential to strengthen economies in many nations. It can be a strategy for boosting export earnings, creating jobs, expanding consumer markets, and diversifying the economy (Manzoor et al., 2019). In both established and developing countries, tourism has become a crucial pillar for sustainable development as it provides a variety of cultural, social, technical, experiential, and natural products for leisure and business (Jayawardena et al., 2008).

Increases in tourism are causally related to economic growth over the long term (Lau et al., 2008). Short-term and long-term economic growth are both a result of the expansion of tourism (Ertugrul & Mangir, 2015; Gautam, 2011; Ghartey, 2013). Tourism spending and economic growth are positively correlated over the long and short term (Yazdi et al., 2017). Long-term economic growth is correlated with tourism-related revenues, tourism spending, and tourist arrivals (Naseem, 2021). Growth in the tourism industry ensures economic benefits to the nation (Kamble & Bouchon, 2014).

Long-term correlations between real GDP per capita and tourism development suggest at least one causal link between the two variables (Lee & Chang, 2008). Empirical evidence found by (Georgantopoulos, 2012; Ohlan, 2017) failed to establish a long-term causal connection between tourism and economic development. Tourism has not effectively contributed to local socio-economic development (Akama & Kieti, 2007). In fact, most studies have noticed a connection between tourism and economic expansion (Akadiri & Akadiri, 2021; Arslanturk et al., 2011; Rasool & Johari, 2021; Razzaq et al., 2023).

Conclusion

Tourism is one of the significant sectors contributing Nepalese economy as it creates jobs, brings foreign exchange revenue, and supports regional development. This paper aims to assess the relationship between the tourism industry and the economic growth of Nepal. The indicators of tourism development - tourist arrivals, length of stay, and gross foreign exchange from tourism- have both short- and long-term causal relationships with economic growth. Moreover, the length of a visitor's stay and the gross foreign exchange earned through tourism are causally related in a single direction to economic growth. The result shows a nexus between Nepal's tourism sector and economic development.

The tourism sector impacts the economic development of Nepal, with relatively abundant natural, cultural, and social resources. Economic growth can be accelerated by sound government policies linked to the tourism sector. The policymakers should give adequate attention to diversifying the tourism services, improving infrastructure, encouraging local communities, promoting sustainable tourism, enhancing marketing efforts, and promoting collaborations between the public and private sectors and local communities to support the tourism industry. The country can benefit from the tourism industry through a sound tourism policy that helps attract both domestic and foreign tourists in Nepal.

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Conflict of interest

The researcher has no conflicts of interest.

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Appendix 1

Least Squares Method

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.737527	0.261921	-2.815839	0.0110
C(2)	-1.360986	0.512677	-2.654667	0.0156
C(3)	-0.336469	0.659012	-0.510566	0.6155
C(4)	6.25E-06	6.18E-06	1.011321	0.3246
C(5)	9.57E-06	7.83E-06	1.222422	0.2365
C(6)	-1.19E-05	1.23E-05	-0.973845	0.3424
C(7)	0.488555	0.564332	0.865723	0.3974
C(8)	0.302310	0.446291	0.677384	0.5063
C(9)	0.752579	0.461416	1.631020	0.1194
C(10)	6.60E-05	5.31E-05	1.242888	0.2290
C(11)	-5.11E-05	0.000134	-0.380065	0.7081
C(12)	6.26E-05	0.000109	0.571870	0.5741
C(13)	11.24029	2.974144	3.779337	0.0013
C(14)	55182.73	9063.193	6.088663	0.0000
C(15)	60294.07	17740.05	3.398755	0.0030
C(16)	86706.04	22803.68	3.802283	0.0012
C(17)	-0.372489	0.213786	-1.742348	0.0976
C(18)	-0.827336	0.271031	-3.052553	0.0066
C(19)	-1.401583	0.423912	-3.306303	0.0037
C(20)	1057.735	19527.48	0.054166	0.9574
C(21)	-10676.58	15442.93	-0.691357	0.4977
C(22)	34463.00	15966.28	2.158486	0.0439
C(23)	9.300591	1.836509	5.064278	0.0001
C(24)	-11.24233	4.651781	-2.416779	0.0259
C(25)	-1.731867	3.785749	-0.457470	0.6525
C(26)	-619561.4	102913.7	-6.020203	0.0000
C(27)	-0.072734	0.151498	-0.480097	0.6366
C(28)	-0.081064	0.296538	-0.273367	0.7875
C(29)	-0.089279	0.381180	-0.234217	0.8173
C(30)	-1.68E-06	3.57E-06	-0.468809	0.6445
C(31)	-1.02E-06	4.53E-06	-0.225459	0.8240
C(32)	-2.00E-07	7.09E-06	-0.028249	0.9778
C(33)	-1.164019	0.326416	-3.566056	0.0021
C(34)	-0.991134	0.258140	-3.839520	0.0011
C(35)	-0.437707	0.266888	-1.640037	0.1174
C(36)	-3.17E-05	3.07E-05	-1.034217	0.3140

C(37)	1.59E-05	7.78E-05	0.203959	0.8406
C(38)	6.24E-06	6.33E-05	0.098678	0.9224
C(39)	2.214324	1.720279	1.287189	0.2135
C(40)	-5305.563	6390.710	-0.830199	0.4167
C(41)	-2398.841	4508.123	-0.532115	0.6008
C(42)	-9434.778	7849.464	-1.201965	0.2441
C(43)	0.039329	0.059251	0.663773	0.5148
C(44)	-0.050451	0.072853	-0.692508	0.4970
C(45)	0.104527	0.133675	0.781948	0.4439
C(46)	2264.397	4206.492	0.538310	0.5966
C(47)	4923.349	3205.865	1.535732	0.1411
C(48)	1707.557	3305.579	0.516568	0.6114
C(49)	1.293528	0.384061	3.368029	0.0032
C(50)	-0.725012	1.760805	-0.411751	0.6851
C(51)	0.611051	1.899920	0.321619	0.7513
C(52)	62455.21	22311.79	2.799202	0.0114

Equation: $GDP = C(1)*GDP(-1) + C(2)*GDP(-2) + C(3)*GDP(-3) + C(4)$

$*TA1(-1) + C(5)*TA1(-2) + C(6)*TA1(-3) + C(7)*LS1(-1) + C(8)*LS1(-2) + C(9)*LS1(-3)$
 $+ C(10)*GFET1(-1) + C(11)*GFET1(-2) + C(12)$

$*GFET1(-3) + C(13)$

Assessment of the Development of Geotourism and Ecotourism in the Pokhara Valley, Nepal

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Abstract

This project was conducted in Pokhara, Nepal, to find the potential of geoheritage sites and to supply avenues for sustainable development and education. We assessed five tourist locations on their potential for geotourism and seven sites for their ecotourism practices. The geotourism quantitative assessment and degradational risk assessment used a survey developed by Brilha (2016). A modified version of the questionnaire created by Baral et al., (2012) was used to evaluate locations for their ecotourism ability in combination with the 5 general Principles of Ecotourism. The study appraised Pokhara for its geodiversity, geological heritage, and ecological conservation in line with UNESCO's list of attributes for aspiring Geoparks (aUGGp). These areas had high scores in geological diversity and geosite potential that may benefit from increased resources to support overall geological education and conservation as an aspiring UNESCO Global Geopark. This study aims to provide resources for tourists at these tourist locations with information on relevant geologic morphology, lithology, eco-conscious procedures, and conservation mitigations, as well as geo- and cultural history. The infographics included in the supplemental materials also aims to educate tourists on how to better take part in geotourism and conservation efforts in the Pokhara Valley of Nepal.

Keywords: geotourism, ecotourism, geomorphology, natural resources and conservation, anthropology cultural

Introduction

Hazards of Nepal's geology are at the forefront of public knowledge, scientific research, and media outreach because of their relevance as a threat to human life. However, while the geohazards of Nepal threaten lives and infrastructure, other aspects of geology can be utilized by its people to promote sustainable economic growth. In addition to financial benefits, there is a need for geologic education for Nepal's public and tourists. In a country with such a diversity in altitude, earth processes are further relevant to everyday human life and culture. Scientists, students, and the general public alike can participate in these benefits of knowledge and wealth because of the advantageous location of their home and its geologic exceptionality.

This study will focus on the Pokhara Valley area, the tourist capital of Nepal. This city shows huge geologic diversity, from far-off mountainous views to small-scale variations in strata. The science behind these sites, however, often falls to the tour guide to explain or to tourists to discover on their own. It would be beneficial to the tourist industry and citizens to have accurate, accessible information that paints a geologic picture understandable to all.

Ecotourism is defined as “responsible travel to natural areas [that] maintain the welfare of the local community and involve interpretation and education...,” and that “[t]he development of ecotourism has to contribute minimal impact on ecosystems and to the local community’s economy, as well as respect for the local culture” (Yuwono, Eko et al., 2020). Conservation of the natural land is only part of ecotourism. Sustaining the local community, such as their cultural and religious sites, is another critical part. These ideals and the five pillars (Table A1) that are expected of an ecotourist location are used in the criteria for analyzing each tourist site. In addition to geotourism potential, this study hopes to evaluate the locations on their current conservatory, sustainable, and eco-friendly applications and mitigation methods and their effectiveness.

Research questions

What are the important geological attributes of each site for tourists and the public’s education? How is ecotourism being advertised and upheld on each site? What principles are being utilized and what mitigation methods are performed to ensure the area remains an ecotourist site? Do these locations offer a diversity of amenities to conservation range? What is the geotourism potential in this area and does this area as a whole fit into UNESCO’s geopark requirements?

Research method

At each site, geological information such as mineralogy, morphology, and structures was gathered using standard field techniques. Fieldwork was aided by a literature review to create a concise story of the natural history of the site. Geological figures and graphics were created using Microsoft software.

Analytical data for geoheritage potential and risk were found for each site using the quantitative assessment of geosites rubric (Table A2), which was originally published in *Geoheritage*. This allows more objective research about these sites’ potential for educational and recreational uses. The researchers generally ranked each of these characteristics from 1 to 5, with 1 being the least optimal for education/tourism and 5 being the most optimal. As Nepal has a particularly strong potential for risks, a degradation Risk Assessment from the same source was included (Table A3).

The information obtained for the ecotourism assessment was how each site performs and adheres to the Principles of Ecotourism. This included evaluation through yes or no questions for amenities offered at the tourist sites (Table A4) and a ranking of 1 through 5 on the availability of certain eco-friendly, tourism-focused criteria (Table A5). Averages were calculated from a list of predetermined questions that encompass the principles of ecotourism and each site’s conservation methods. The researchers used a modified rendition of the questionnaire created by Baral, et al., to determine amenities offered and ecotourism criteria met at each location. A modified version was used because there does not appear to be a universal and official scale to determine if an organization, company, or location qualifies as an ecotourist site. It is important to note that the scale and criteria used for all the amenities (Table A4) are weighed equally as either having an amenity (yes) or not having it (no) within the Amenities Rating Scale (ARS). If an area exhibits one method of Leave No Trace principles being used or one accessibility procedure, it is weighed equally to a location that may have two or more procedures implemented at the site.

The criteria within the Ecotourism Rating Scale (ERS) is based on a 1 to 5 scale with a rating of 1 meaning there are poor or no conservation/sustainability aspects, and 5 meaning there are great or near-perfect sustainability aspects. These location ratings were completed as accurately as possible by the researchers, though it is evident that interpretation and perceptual errors particularly of foreigners in an area can and do occur during analysis.

Results

The intramontane valley of Pokhara draws tourists from around the world with its cultural heritage sites, beautiful mountain views, and active lakeside neighborhood. It also houses a variety of locations that are prime areas for observing sedimentary structures, massive debris deposits, large geomorphologic formations, karstification, and river processes. This variety of geologic features makes geotourism in Pokhara a massive prospect, with the entire region having the potential to be a UNESCO geopark in the future.

Figure 1

Map of the site locations



Note: Google Earth image, 2022

Table 1

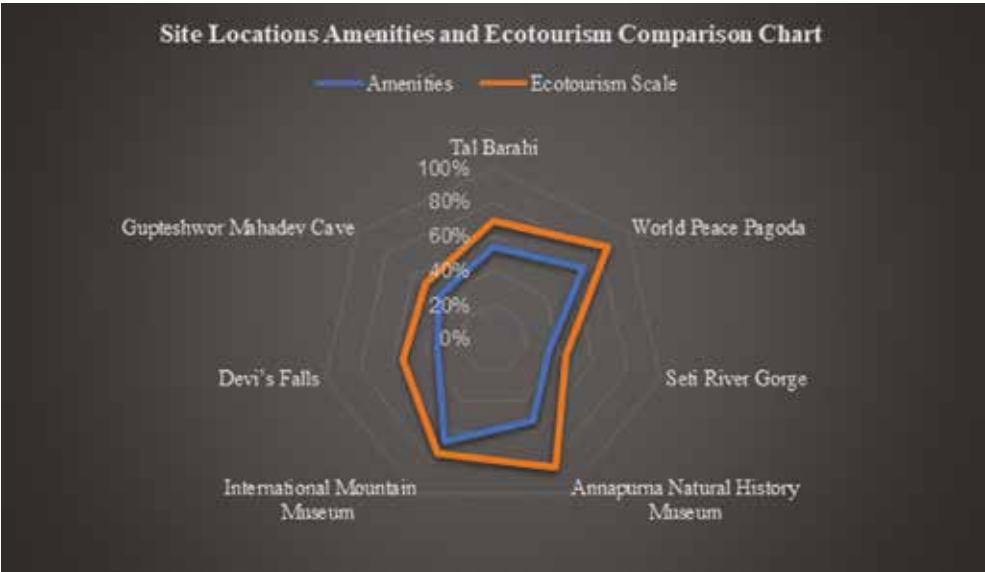
Final scores for each site

Site Name	Geotourism Assessment Score (100 is the most potential, 0 being the least)	Risk Assessment Score (100 as least risk, 0 as most risk)	Amenities Rating Scale (ARS; 0 as least offered, 100 as most)	Ecotourism Rating Scale (ERS; 0 as least eco, 100 as most)
World Peace Pagoda	88%	70%	67%	86%
Phewa Lake/Tal Barhi	79%	40%	53%	69%
Seti River Gorge	78%	66%	33%	43%
Devi’s Falls	81%	61%	33%	54%
Gupteshwor Mahadev Cave	82%	51%	40%	51%
Annapurna Museum	N/A	N/A	53%	83%
International Mountain Museum	N/A	N/A	67%	74%

Note: Gilbert and Landsem, 2022

Figure 2

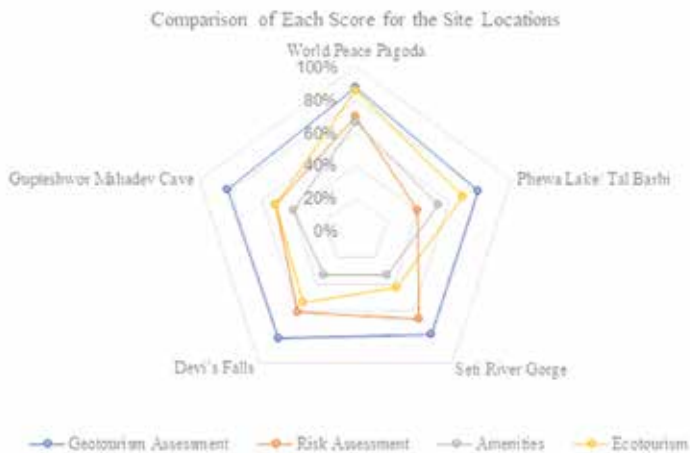
Site locations amenities and ecotourism comparison chart



Note: Gilbert and Landsem 2022

Figure 3

Comparison of each score for the site locations



Note: Gilbert and Landsem, 2022

Locations

World Peace Pagoda

The first observed site was the World Peace Pagoda, situated just under 1000 meters on the south side of Phewa Lake. Geologic features noticeable on the hike up to this site are phyllite outcrops and landslide scarps from residual soils. From the top, the glaciated Annapurna Range can be viewed, the Harpan Khola Floodplains near Phewa Lake, terraces, as well as larger-scale landslide scarps. On the Geosite Assessment Scale, the area received 88% (Table 1). The most highly-ranked attribute of this site was the scenery, with a view of the Annapurna Range and many large-scale geomorphological features that surround the Pokhara Valley. In addition, the Pagoda is a well-established site for pilgrimages and tourism as it enshrines relics of Lord Shakyamuni Buddha. This association with cultural values allows for more outreach of tourists, whether they hike to this site for the beautiful pagoda or the overlook of Pokhara and its geology.

While the scenery adds geological heritage to this site, the accessibility of this uphill site will deter tourists, especially elderly or disabled tourists. There is also a risk for deterioration in

Figure 4

World Peace Pagoda view



Note: Gilbert and Landsem, 2022

each location – in this case, the Risk Assessment Scale was moderate to low at 70% (Table 1). The main risk is landslides in the weathered outcrops and water-logged soils surrounding the hike. The gabion levee mitigation of these slopes and the upkeep of the monument lessens the risk these slopes are to those who visit this site. The majority of the hike up appears to be well preserved and sustained, with minimal urban development, allowing the tourist to be almost fully enveloped by the forest. While this site is difficult to reach by walking, there were aspects of the hike up the mountain that were noted for their accessible attributes. These included some handrails (an ongoing installation) and resting locations. Along the path to the World Peace Pagoda, trashcans were frequently spaced along the durable-surfaced trail that minimized off-trail walking. These were provided and possibly maintained by a local boating company. Once at the top of the Pagoda, signs about the cultural significance and the history of the Lord Buddha were in both English and Nepali. There were also signs displaying Leave No Trace principles, such as enforced observed silence for consideration to pilgrims and signs saying to not pick flowers or otherwise disturb wildlife. The area was free to enter for tourists and locals, though donation boxes were available. Solar panels at the top of the mountain around the pagoda were also observed. These operations made this area a good choice for an ecotourist interested in the cultural tourism of Pokhara. For the Amenities Rating Scale (ARS) average, the World Peace Pagoda scored 67% (Table A4), and the Ecotourism Rating Scale (ERS) averaged 86% (Table A5).

Phewa Lake

Other case studies of the Geosite Assessment Scale of Pokhara brought scores close to 80%. Phewa Lake is incredibly accessible, surrounded by a bustling tourist district on one side, with cultural and recreational areas perched on top of the hills that flank it. This proximity to other sites is a huge benefit to developing tourist areas. The measurement of this development potential is 79% (Table 1). However, the ability to access this site easily makes it more at risk of degradation and pollution from the dense population around it. Phewa Lake is a fragile ecosystem, with many other processes depending on its health, giving it the most amount of degradation and risk potential for the geosite case studies observed. It is important that, if further developed for geological tourism, this site promotes sustainable practices and educates readers on the fragility of the lake.

Figure 5
Phewa Lake



Note: Gilbert and Landsem, 2022

The island that exists within Phewa Lake is home to a temple that is culturally important to many within the Hindu religion. Tal Barahi Temple which was one of the first sites studied for its ecotourism ability is only accessible by boat, and no motorized boats were observed at the time of the study. Some pre-planning procedures may be necessary particularly during

Figure 6

Seti River Gorge overlook



(Gilbert and Landsem, 2022)

peak tourist season to hire a boating company, which may impede locals' ability to participate and worship freely. Tal Barahi Temple had signs about the legend of Phewa Lake, some information regarding the lake, and donors in Nepali. While arrival to the island on a boat may prove difficult for accessibility, the island did attempt to make its location accessible with signs, ramp access, handrails, and benches to rest on. Aside from hiring local companies to boat you to the location, the entrance to the temple and island was free and open to tourists and the public. There was a donation box next to the temple for anyone to give freely, potentially used for the upkeep of the temple and island. The area had some natural elements on the island such as planted trees and shrubs, birds, and a fish-watching area; however, the area was highly developed. All of these elements would benefit cultural tourists and locals, though do not benefit the ecotourism identity of the Tal Barahi Temple island. This leaves the average for the ARS of the island to be

53% (Table A4) by the researchers, and its ERS averaged to be 69% (Table A5).

Seti River Gorge

There are at least two locations that will be labeled as the Seti River Gorge area. The first area is the physical gorge as it relates to geotourism, whereas the second location is the location that many tourists will first approach in their search for the Seti River Gorge. The Seti River Gorge itself is a unique area in Pokhara that shows karstification, river erosional processes, and confluence between the Seti River and the Khola River. This site scored a 78%, with high scores in scenery and geologic diversity in the Geological Assessment Score.

The main risks to tourists of this area concern observing it closely – it is both not very accessible and the sheer sides of the gorge could produce falling rocks and other unsafe conditions for tourists. In regards to the site itself's safety, the degradation risk score was a 66%. This area is classified as high risk of subsidence, low load-bearing capacity, and sinkhole hazards, and the development of it could strain these systems and cause infrastructure or human damage (Koirala et. al, 1998).

The location that the ecotourism and amenities scale covers is above the Seti River Gorge on Lamachaur Road at Tunnel 3. After paying a small entrance fee, this location was observed to have a small garden with two benches, one flight of stairs with handrails, and a short cement

Figure 7

Gupteshwor Mahadev Cave staircase



Note: Gilbert and Landsem, 2022

bridge with water running parallel and in the bridge to Tunnel 3. Looking over the side of the bridge, the Seti River is visible through the gorge. The area does not have many negative impacts on the local people. It provides some funds with fees for the community and the upkeep of the area, as well as donations at the shrine at the end of the short bridge being accepted. This area does not do much towards the conservation of the area; however, it does help the community to keep one of their cultural sites open with the fees paid by tourists. The area was not large, nor did it have a lot of amenities for tourists giving it a lower scale of 33% for the ARS, and the lowest of the ERS at 43%.

Devi's Falls and Gupteshwor Mahadev Cave

These two geosites are in close proximity to each other and represent the plethora of formations that can be formed from karstic sediments. Devi's Falls was well-accommodated with optimal viewpoints of the falls, where the Pardi River plunges through the consolidated sediments into a 200-meter-long underground gorge (Fort, 2010).

Beds of 10 to 20 cm thickness are visible in this cave system. Gupteshwor Cave shows a variety of sedimentary structures in the bedrock. There were laminations and wavy bedding observed in the lower part of the cave wall at a thickness of about 30 cm. The middlemost section showed hummocky cross-stratification, with pinching and swelling 5 cm thick beds. Above this was lag gravel deposits of angular to sub-rounded clasts of pebble size. There were instances of wedges and other forms of cross-bedding in this section.

At Devi's Falls, while the erosion of these formations by water creates the unique formations opportune for tourism, their weakness can be a risk as well. The consolidated sediments of the Pokhara and Ghackok formations can be prone to translational slides and rock falls, as well as sinkhole and subsidence hazards (Koirala et al., 1998).

Besides safety for tourists, degradation of the site must be considered in their geoheritage assessment too. Gupteshwor Cave has low ceilings in some places with stalactites that tourists were observed touching. This can greatly damage the growth of stalactites and the overall health of the cave system. The risk of degradation of the Gupteshwor Cave site was found to be 51%, while Devi's Falls, much less accessible to vandalism, scored a 61%.

Upon paying a fee and entering the area, there were many statues and a large winding staircase that leads down to the cave where photography was strongly prohibited. An electric gate at this site showed both the importance of the area and the amount of revenue they generate to uphold this sacred area with visitors - significantly different from the other sites the researchers analyzed. The area above the cave had trashcans and some walking paths that were poorly adhered to, but durable areas both above and within the cave existed. The funds for the ticket and donations at the temple clearly funded sustaining this cave, as well as hiring caretakers and workers for the site. However, in ecological terms there appeared to be a lack of conservation for the cave as a natural site. There were no regulations against touching the

Figure 8

Devi's Fall



Note: Gilbert and Landsem, 2022

walls and lights were put in place that promoted the growth of plants and moss, potentially disrupting the ecosystem within the cave. It is important to recall it is a religious site, and these aspects that may seem to conflict with eco-conscious conservation may be important to the conservation of their religion and culture. The scaling that the researchers used did not have a way to reflect on these ideas, which could potentially be important for every location visited. Therein, the scaling for the ARS came to be 40% (Table A4) while the ERS averaged 51% (Table A5).

Devi's Falls, often also referred to as Davis Falls, had a few different amenities and ecotourist aspects than Gupteshwor Mahadev Cave. There was a separate entrance fee, and upon walking in there was a small garden that lead to a religious statue of the Lord Buddha, a photo zone, the summer house, and Davi's Fall. The path through the garden was durable and kept tourists on the trail with signs to leave the flowers and stay out of the garden. Once through the garden, the trail became poorly regulated, and large areas of the ground had been cemented over to withstand large crowds of people. There were some benches throughout the park, handrails, and some signage in both Nepali and English. Some signs provided visitors with information about the area, its legends/history, and other local areas such as the Gupteshwor Mahadev Cave to go visit. While the area did have a shrine, it did not appear to be related to the waterfall and was thus suspected not to be a geo-specific cultural site. This area does not appear to be built or regulated as an ecotourism location, based more on its geotourism qualities. This location was averaged to have an ARS of 33% (Table A4) and an average of 54% (Table A5) toward the ERS.

Museum ecotourism

There were two museums that the researchers visited and evaluated. The first museum was the Annapurna Natural History Museum. This location was free to visitors with donations accepted and offered a great amount of education on plants, landscapes, and wildlife of the area. The museum had exhibits for ethnic groups with information about their cultures and religions, with some comparisons of other places primarily within the Annapurna and Nepal area. The majority of this information was in English. This potentially would impede locals from being able to visit and benefit from the information within the museum, though it is located on a college campus and benefits the students there. While no "Green Energy" was observed on site, there were exhibits that had information about different eco-friendly forms of energy and their importance. This location itself may not be considered a natural ecotourism location due to the lack of the literal natural world within the museum, yet the amount of information that is covered to educate locals, students, and tourists gives it an average on the ARS of approximately 53% (Table A4), but with an ERS of 83% (Table A5) due to its vast amount of education.

The International Mountain Museum required an entrance fee. Entering featured a short walk through a garden that led visitors to the main museum. The museum offered information about trekkers and mountaineers but did not offer those amenities themselves. There were trash bags throughout the museum and the garden, which was mostly restrictive to the trail through the garden. While there was not a particular place for nature photography, there were exhibits with lots of nature and wildlife photography and opportunities to rent the garden to film videos. Exhibits within the museum often explained Leave No Trace principles and ideas, such as respecting wildlife, being considerate to others, leaving what you find, proper waste disposal and management, reducing firewood consumption, and staying on the trail.

The museum also talked about the Annapurna Conservation Area Project (ACAP), climate change issues both at local and global levels and Everest trash and Leave No Trace (LNT) issues that mountaineering poses. The ARS was at 67% (Table A4), and the ERS average was recorded by the researchers at 74% (Table A5).

Interpretations

Geological setting

The Pokhara formation that forms these on-site tourist attractions has calcareous gravels with a matrix derived from limestone. The Ghackok formation shows more angular clasts with a higher degree of calcareousness. The clasts are mixed in origin, showing gneisses, quartzites, and sandstones/mudstones of varying degrees of metamorphosis. These outcrops depict rocks eroded from the Lesser Himalaya, Higher Himalaya, and Tethys sequences.

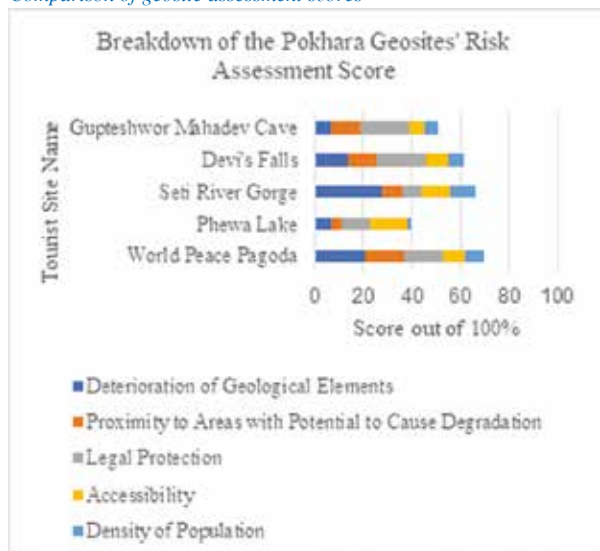
The formation of the Pokhara Valley is interpreted to be from several historical events of debris flows from the steep slopes of Annapurna II and IV (Fort, 2010). Sub-angular to sub-rounded sediments of the Pokhara formation imply debris and muddy flows alternated with river and alluvial fan deposits. The centimeter to decimeter scale of these sub-angular clasts suggests the debris flows could have been caused by an earthquake that would destabilize these slopes enough to dislodge and transport up to 3,000-ton boulders – for example, the famous Bhim Kali Boulder on the Pokhara University Campus. The lake is a drowned valley (Gurung, 1970), forming from the damming of the Seti River by these various catastrophes. This variety of geologic elements makes Pokhara an ideal hub for education in this field.

Geotourism potential

The 5 case studies of geotourism potential averaged to be 81.6%. Overall, these sites excelled in proximity to recreational areas, the density of the population, and the scenery. It seems that in addition to the geology present at this site, these sites benefit from each other and the interconnected tourist network of Pokhara (Figure 9).

Figure 9

Comparison of geosite assessment scores

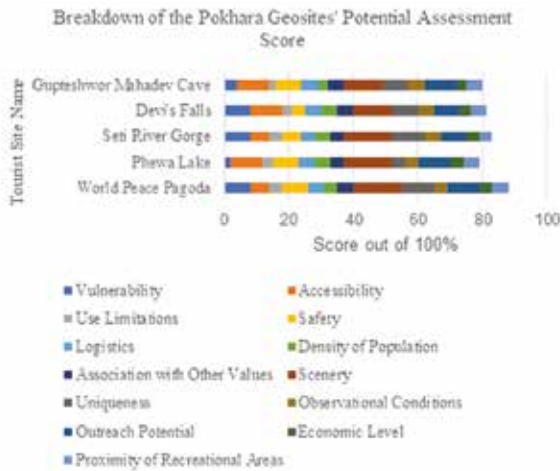


Note: Gilbert and Landsem, 2022

On the other hand, the weak points tended to be safety and vulnerability. The deterioration Risk Assessment Score (Figure 10) furthers this point, with lower scores that average 57.8% (Table 1). While the dense population aids geosites' interconnected development, it heightens the risk of deterioration by this population. In fact, the degradation or tourist safety risk of these sites had an inverse relationship to their uniqueness and aesthetic value. For example, Phewa Lake scored a 1 in vulnerability and a 5 in scenery (Table A6 and A7), and Seti River Gorge scored a 3 in safety yet a 5

Figure 10

Comparison of risk assessment scores



Noe: Gilbert and Landsem, 2022

correlated with the sites that had more ecotourism aspects and information (Figure 2). When used in conjunction with each other, there is potential for growth in helping create a sustainable area and a place for the education of the community and tourists, as well as for profiting and economically helping the local community.

UNESCO Geopark potential

A UNESCO Geopark offers residents and visitors unique and stimulating earth science processes for educational, recreational, and sustainable purposes. The researchers observed that Pokhara offers a plethora of sites to observe unique geological features, from small-scale up-close sedimentary structures in the Gupteshwor Cave to large-scale geomorphological features in the view from the World Peace Pagoda. Additionally, some areas offered more information about these areas off-site, such as the Annapurna Natural History Museum and the International Mountain Museum. Pokhara's geological heritage ties into cultural values as well as this community's economic welfare. Each of the geosites researched has processes representative and stemming from a variety of geologic areas of Nepal. There are sediments with clasts of varying degrees of metamorphism for observation, lacustral and fluvial geomorphology, and glaciated mountain views in just 5 of the many geological tourist spots of Pokhara. Each of these areas has value in the scientific community and cultural heritage with local stories and religious significance attached to each. This is valuable on an international level as well because of Nepal's diverse geology and culture attached to its steep elevation changes.

As much as geologic importance and heritage is fundamental to UNESCO Geoparks, their development requires a large capacity for educational, conservational, and economic infrastructure. This area lacks some educational tools that would be used by residents, tourists, and students in a Geopark. Very little about the geology of this area exists outside of technical papers or with easy access to tourists at each site. Promotional material and geotourism action plans, outlined by UNESCO in their requirements for a Geopark, are yet to be extensively developed. We have created and provided 4 diagrams for on-site learning

in both observational conditions and uniqueness. Education is key to alleviating this difference - ideally, a campaign to teach tourists and locals about the geological factors of the sites around Pokhara. This would include how they can keep themselves and the sites safe with ecotourism principles while learning about the geologic features they are seeing and how they came to be.

In addition, the sites that were evaluated for their amenities to their ecotourism potential show that sites that appeared to offer more in the way of amenities

at the geosites visited as a model for geological learning of tourists with no earth science background (Figure A1-Figure A4).

In terms of conservation, many of these tourist locations provided some sort of regulation and upkeep. In areas such as the Tal Barahi, cleaning of the location was actively occurring during the field study, and the museums and Gupteshwor Mahadev Cave showed maintenance occurring. New infrastructure was also being built in locations such as the World Peace Pagoda. There were attempts to mitigate landslides and erosion of this site with the ongoing installation of gabion walls and structures. Some locations provided information about the geology of the area, though this was not common enough throughout our study to thoroughly educate a tourist or local. Many of the locations did not have their own websites, and instead relied on other websites, while others did not even have that. Only 3 of 5 of the on-site locations had small map displays at the site. Still, many of the areas promoted some concept of sustainability either with signs or exhibits with in-depth information about conservation and sustainability. There appears to be potential for these sites, with modifications, to apply for a Geopark status, but further development of these sustainability practices and educational efforts is necessary.

Worldwide travel and tourism-related GDP trends flatlined significantly with the recent COVID-19 pandemic, but travel to Nepal and therefore tourism economic benefits are predicted to increase in the coming years. With this increase in traffic and therefore revenue, it is important that Nepal invests in sustainable and long-lasting plans for the expanding tourist industry. The cost of this sustainable development will ward Pokhara away from potential degradations of geological and cultural sites, pollution to the environment, and the social impact on locals.

There are inevitable uncertainties in this research as Pokhara expands and the climate crisis worsens, including culture shifts, geohazard-related shifts to the sites such as earthquake damage, and land use shifts from urbanization. In addition, foreigners analyzing a location they are not fully accustomed to, with minimal knowledge of all the nuances of the culture and human's relationship to the land has the potential to skew the results of the findings. This study would benefit from incorporating personal accounts from businesses and those living close to the tourist sites, as this was not possible in the research period. According to Bhandara (2013), a key factor for tourism management and development is community awareness in Pokhara. This would entail increasing the participation of residents and local businesses in tourism, creating awareness of the value of their sites to their heritage, and sharing those aspects with visitors. While this study benefits visitors who speak English by providing information in their language (Figure A1-Figure A4), a plan to incorporate the community to have more of a role in the geological education of these sites would add more authenticity to their value as geological heritage.

Conclusion

During the field study, the researchers were able to analyze and evaluate several different tourist locations within the Pokhara Valley of Nepal and extract data about their geotourism and ecotourism capabilities. This information was collected for the Phewa Lake area and the two cultural sites studied there, for the two nearby sites along the Phewa Tal stream, the Seti River Gorge, as well as two different museums. While geotourism, risk, amenities, and ecotourism may not immediately appear to be interrelated, there do appear to be overarching trends when doing comparisons for the data. As found in the results and the interpretations,

geotourism in Pokhara remains a massive prospect, with the region having the potential to be a UNESCO Geopark. This information can help tourists make more informed decisions on locations they wish to visit while traveling to the Pokhara area, and how those locations align with cultural tourism, geotourism, and ecotourism. This study also should prove beneficial to the sites visited and future sites for expanding their information on their location and what features can progress their tourism and local communities. Through this study it is hoped that the people of the Pokhara Valley in Nepal, as well as any future tourists, are better informed about the geo- and ecotourism of the area and how it intermingles with all the factors concluded in this study.

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Conflict of interest

The authors declare no conflicts of interest.

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Supplemental Materials

Figures and Tables

Table A1

Pillars of Ecotourism

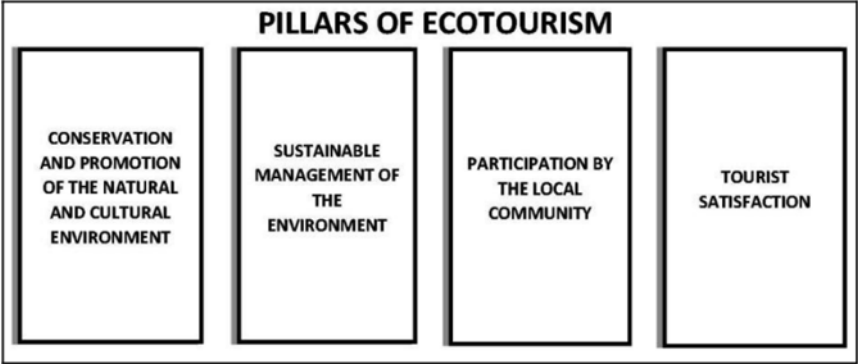


Table A2

Quantitative Assessment of Geosites’ use for tourist and recreational and purposes

Criteria	Weight
Vulnerability – existence of geological elements that can be destroyed by students or visitors	10%
Accessibility – the easier and shorter the walk between the means of transportation and the site is, the higher the site’s potential use	10%
Use limitations – existence of obstacles that may be problematic for the development of educative or touristic activities	5%
Safety – when the field activity can be carried out under low-risk conditions for students and visitors, the site’s potential use increases	10%
Logistics – existence of facilities to receive students and visitors, such as accommodation, food, and toilets	5%
Density of population – existence of a population near the site potentially provides students and visitors who will use the site	5%
Association with other values – the existence of other natural or cultural elements associated with the site may justify interdisciplinary fieldtrips and attract visitors	5%
Scenery – represents the beauty of the geological elements that could stimulate students’ and visitors’ interest for the site and attract visitors	15%
Uniqueness – concerns the distinctiveness and the rarity of the geodiversity element that could promote students’ interest for the site and attract visitors	10%
Observation conditions – the better the conditions for observation of all the geodiversity elements on the site, the higher its potential use	5%
Didactic potential – the use of the site by students of different education levels increases its potential use	0%

Variety of elements – a high number of different geological elements with didactic potential increases its potential use	0%
Outreach potential – related to the capacity of a geodiversity feature to be easily understood by people with no geological background	10%
Economic level – the high level of income of people living near the site suggests a higher probability of it being visited	5%
Proximity of recreational areas – a touristic visit to a site may benefit from the existence of well-known tourist attractions in the surrounding area	5%

Note: Saayman, 2009; Price, 2017

Table A3

Analysis for Degradation

Criteria	Weight
Deterioration of geological elements – reflects the possibility of loss of geological elements in the site as a consequence of: (1) its fragility, namely its intrinsic characteristics (size of geological element, ease of obtaining samples, resistance of the rock, etc.) and natural actions (sensitivity to erosion, intensity of erosional agents, etc.) and (2) its vulnerability to anthropic actions (tourism, agriculture, urban development, vandalism, etc.)	35%
Proximity to areas/ activities with potential to cause degradation – mining, industrial facilities, recreational areas, roads, urban area, etc.	20%
Legal protection – related to the location of the site in an area with any type of legal protection (direct or indirect). Access control refers to the existence of obstacles, such as: restrictions by the owner, fences, need to pay entrance fees, mining activities	20%
Accessibility – reflects the conditions of access to the site for the general public (not considering disabled people). A site with easy access is more likely to be damaged by visitors' misuse than one with difficult access	15%
Density of population – reveals the number of persons that live near the site and that can cause potential deterioration due to inappropriate use (vandalism, theft, etc.)	10%

Note: Brilha, 2016

Table A4

List of Amenities for Site Locations Amenities Rating Scale score

Amenities Rating Scale Criteria (Yes or No)	Tal Barahi	World Peace Pagoda	Seti River Gorge	Annapurna Natural History Museum	International Mountain Museum	Devi's Falls	Gupteshwor Mahadev Cave
Trekking/Hiking	No	Yes	No	No	No	No	No
Wildlife viewing or bird watching	Yes	No	No	No	No	No	No
Mountaineering	No	No	No	No	No	No	No
Cultural site	Yes	Yes	Yes	No	No	No	Yes
Ethnic museums	No	No	No	Yes	Yes	No	No
Research/Study	No	No	No	Yes	Yes	No	No

Nature photography	No	No	No	Yes	Yes	No	No
Trash/Recycling Cans	Yes	Yes	No	No	Yes	Yes	Yes
Accessibility (ramps, benches, signage, etc.)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
“Green” energy (solar panels, etc.)	No	Yes	No	Yes	Yes	No	No
Minimization of off-trail walking, maximization of natural spaces	No	Yes	Yes	Yes	Yes	No	No
Designated/No smoking areas	Yes	Yes	No	No	No	No	No
Leave No Trace principles	Yes	Yes	No	Yes	Yes	Yes	Yes
Fees and donations for							
conservation or local benefits	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Natural elements (trees, bushes, water area, animals, etc.)	Yes	Yes	Yes	No	Yes	Yes	Yes
Average (100% being the most fulfilling, 0% being the least)	53%	67%	33%	53%	67%	33%	40%

Note: Brilha, 2016

Table A5

Ecotourism Rating Scale score for Site Locations

Ecotourism Rating Scale Criteria (1 to 5)	Tal Barahi	World Peace Pagoda	Seti River Gorge	Annapurna Natural History Museum	International Mountain Museum	Devi's Falls	Gupteshwor Mahadev Cave
Minimizes negative impacts on the environment and local people.	4	5	3	5	3	3	3
Contributes to the conservation and management of the legally protected area.	3	4	2	4	3	3	2
Promotes participation and empowerment of local people.	4	5	3	4	3	2	4

Satisfies visitors' expectations towards successful ecotourism projects.	2	4	1	4	4	2	2
Increases the awareness of the area's natural and cultural systems.	4	4	2	5	5	3	2
Directs economic and other benefits to local people.	3	3	3	2	3	3	3
Provides adequate information to visitors before and during visits.	4	5	1	5	5	3	2
Average (100% being the most fulfilling, 0% being the least)	69%	86%	43%	83%	74%	54%	51%

Note: Gilbert & Landsem, 2022

Table A6

Quantitative Assessment of 5 Pokhara Geosites' Capacity to Support Geotourism

Criteria	Weight	World Peace Pagoda	Phewa Lake	Seti River Gorge	Devi's Falls	Gupteshwor Cave
Vulnerability	10%	4	1	4	4	2
Accessibility	10%	3	5	3	5	5
Use Limitations	5%	4	3	4	3	4
Safety	10%	4	4	3	2	4
Logistics	5%	5	5	4	5	5
Density of Population	5%	4	5	5	5	3
Association with other Values	5%	5	4	4	5	5
Scenery	15%	5	5	5	4	4
Uniqueness	10%	5	2	5	4	4
Observational Conditions	5%	4	4	5	5	5
Didactic Potential	0%	4	5	4	5	
Variety of Geological Elements	0%	5	3	5	3	5
Outreach Potential	10%	5	5	4	4	5
Economic Level	5%	4	4	4	3	3
Proximity of Recreational Areas	5%	5	5	4	5	5

Note: Gilbert & Landsem, 2022

Table A7

Quantitative Assessment of 5 Pokhara Sites' Degradation Risk

Criteria	Weight	World Peace Pagoda	Phewa Lake	Seti River Gorge	Devi's Falls	Gupteshwor Cave
Deterioration of Geological Elements	35%	3	1	4	2	1
Proximity to Areas with Potential to Cause Degradation	20%	4	1	2	3	3
Legal Protection	20%	4	3	4	5	5
Accessibility	15%	3	5	4	3	2
Density of Population	10%	4	1	5	3	3

Figure A1

Example of Geological Infographic for On-Site Education of Tourists at the World Peace Pagoda

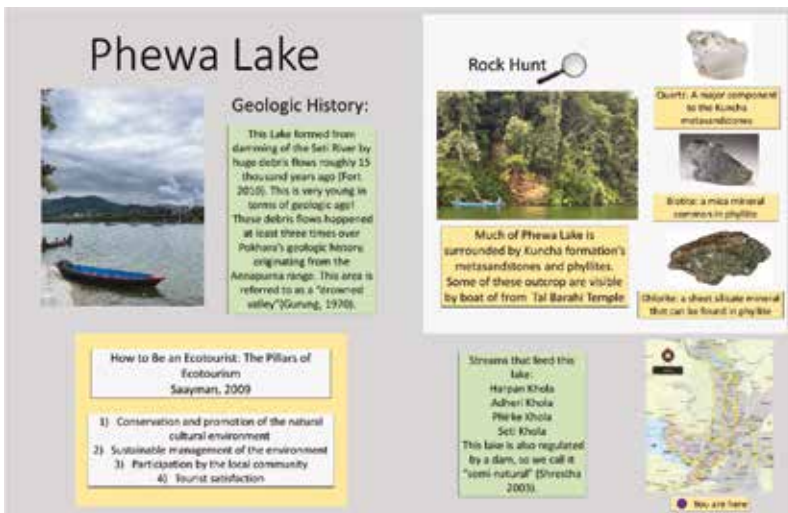


Figure A2

Example of Geological Infographic for On-Site Education of Tourists at the World Peace Pagoda

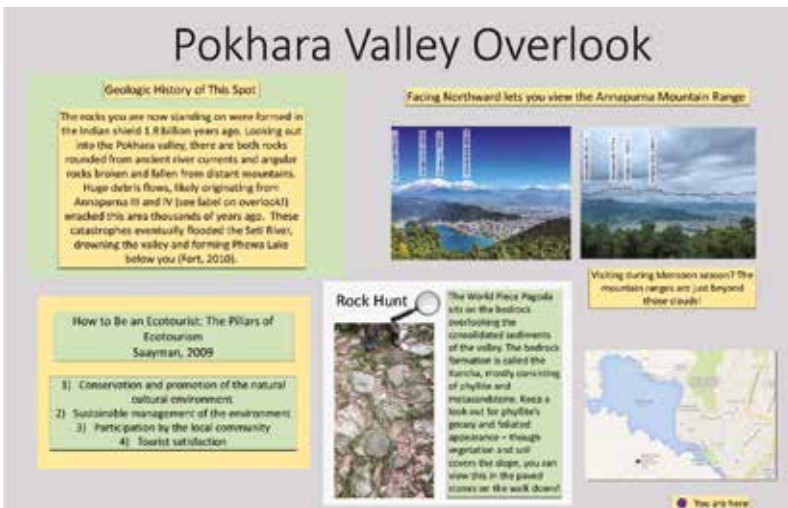


Figure A3

Example of Geological Infographic for On-Site Education of Tourists at the World Peace Pagoda

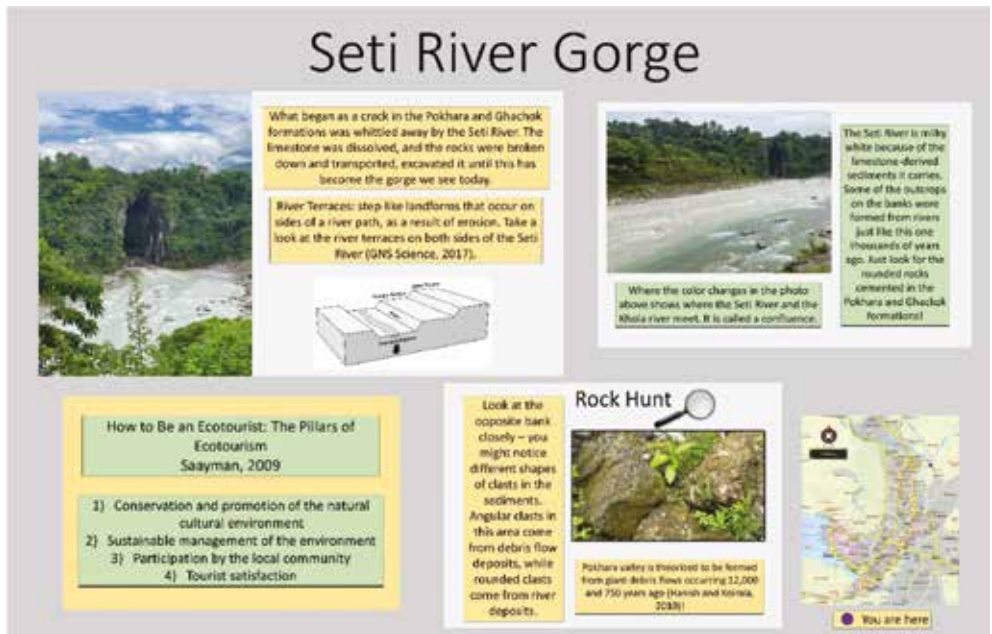
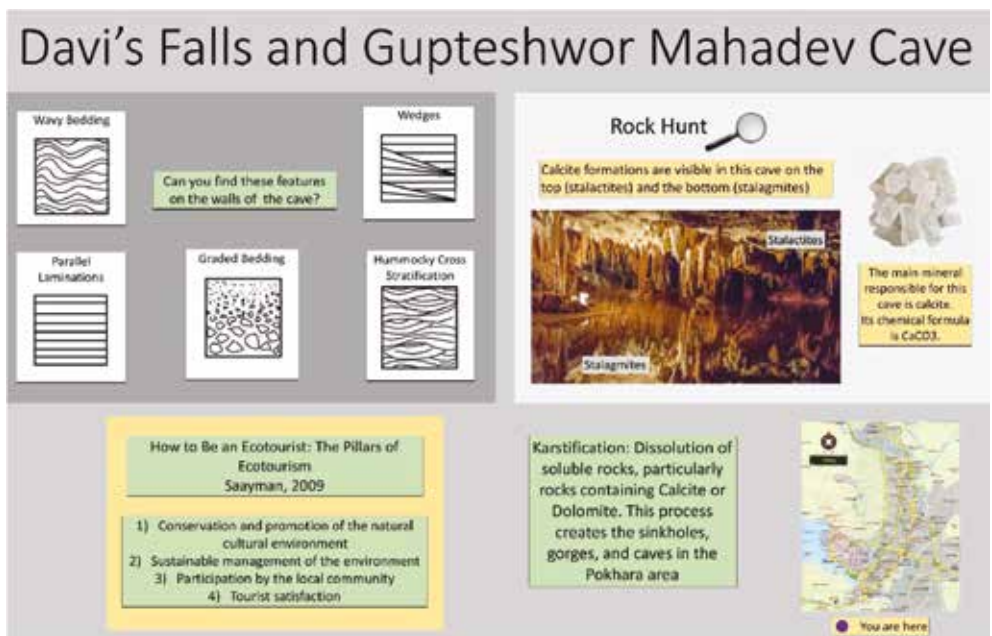


Figure A4

Example of Geological Infographic for On-Site Education of Tourists at Davi's Falls and Gupteshwor Mahadev Cave



Tourism, Mountain, and ‘Mystic Fire’: A Study on Spiritual Journey of a Vedic *Sadhak* Living in Panchasee Mountain in Central Nepal

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Abstract

This paper is on spiritual tourism associates: tourism, ecology, and spirituality in the specific context of Panchasee mountain in the central Nepal. It presents spiritual experiences of a Vedic *sadhak*, born and raised in the west, lived in Sri Aurobindo Ashram in India for forty years from his young age and now has been living in Panchasee. Its key concern is to understand his spiritual quest in the Himalayan ecology. Focused on the stage of the spiritual transformation of the *sadhak*’s inner journey it reveals that the *sadhak* is highly energized to remain close with his spiritual wisdom that he experienced in Panchasee ecology and being active as a member of a family of the mountain society. It concludes with some insights in relation to spiritual tourism. This study has adopted a special research strategy called *fursad* ethnography to generate data on the *sadhak*’s life history and his spiritual quest in the Panchasee mountain.

Keywords: spiritual quest, tourism, Panchasee, mystic fire, *fursad* ethnography

Introduction

There are two extreme tendencies on mountain discourses in relation to tourism research. One is the discursive construction of mountains as sacred and holiest places and venerated as the abode of the gods and supernatural powers (Apollo et al., 2023). Another construction is praising them as the most beautiful, virgin, pure, and solitude geographies of the earth (Singh & Gaitree, 2019). The problem in both of these constructions is that mountains are alienated and kept away from people’s everyday life as perfect and calm place where they just pray, worship or contemplate. There are specific implications of this problem. A major implication is that tourism research and studies clustered on the very specific areas and issues like of the mountain like ‘religious sites’, ‘pilgrimage’, ‘wilderness’, ‘well-being’, ‘yoga’, ‘meditation retreats’ and so on (Shaohua et al., 2023; Shrestha & Shrestha, 2012). On the other, the study of spiritual context of mountain is mostly attributed with ‘beauty’, ‘pure’ and ‘solitude’ (Shaohua et al., 2023). Since both of the tendencies lack the interactive dimension of mountain and people, their cultural and spiritual values and practices. Therefore, this paper examines these relations between mountain and people in their everyday lives which is mediated by their cultural and spiritual practices. It concentrates on transformative experiences of a spiritual *sadhak* (a spiritual seeker, practitioner). The *sadhak* is a former tourist from the western society, lived in a Vedic Ashram in India for 40 years, and now living in Panchasee ecology in the Annapurna region in the central Nepal about 2 decades. By examining the

experiences, the paper shows how mountain and the Himalaya as a unique ecology on earth can mediate in a journey of spiritual quest of a western tourist.

Panchasee mountain: the abode of the *Sadhak*

The Vedic *sadhak*, whose spiritual quest is the main aspect of this study is living in Panchasee Mountain regularly for the last thirteen years until now, but has been visiting Nepal and in particular this area for more than two decades. The Panchasee mountain has a unique geographic formation having combination of five holy peaks and with dense subtropical forest extended in the area of 5500 hectares (Bhandari et al., 2018). The mountain lies in the mid-hills of central Nepal in the western-most boundary of Pokhara valley. It is 28 km far from Pokhara which is also a major tourist destination in western Nepal and famous for the lakes, caves, and the scenic beauty of the highest peaks of the world including Mt. Annapurna, Mt. Dhaulagiri, and Mt. Manasulu.

Figure 1

A view of the top of Panchasee Mountain and Panchasee Vanjyang in the bottom



The altitude of the highest pick of Panchasee mountain is 2,517 m (8,258 ft.) from the sea level (MDO, 2015). The mountain itself is the origin of the main rivers that feed Fewa Lake in the valley. People can reach to the top of the mountain from different entry points of different directions in Kaski, Parbat, and Syangja districts of Gandaki province. Government has recognized this area as the Panchasee Protected Forest in 2015 (MDO, 2015). It is a rich sanctuary with lush green forest of diverse species of flora and fauna (Bhandari et al., 2018). The Panchasee forest is well known for its dense concentration of the orchids: ... 107 species of orchids, about 300 plant species -including Rhododendron, *Kharsu*, *Chap*, *Chandan*, and the big mammals includes; tiger, bear, deer, different species of monkeys (Bhandari et al., 2018).

Figure 2*A view of Mt. Machhapuchhre from Panchasee Mountain*

Throughout the history, the Himalayan region is well known for the hermitage and spiritual quest of ancient Rishis, sheers, and poets (Witzel, 1976). In central Nepal, Panchasee Mountain is well known as a holy site with ancient temples, meditation hut ruins, and places of fire sacrifices. The word ‘Panchasee’ itself designates its holiness which is the combination of two Sanskrit words; *Panch* (meaning; five), and *Asana* (meaning; position). So the literal meaning of ‘Panchasee’ is five positions of human or divine body of the yoga traditions. Local people also consider the mountain as a *Panchadham*; the site with five key religious sites. It also indicates the site with potential containment of various kinds of religious or spiritual quests. The local myths also validate Panchasee as the meditation site since the Vedic age. They consider it as the place where the dead body of Shrawan Kumar, a mythical character who was supposed to be killed the King Dasarath, father of the Lord Ram, was buried (Poudel, 2015). It is also mentioned that in Panchasee the *Panch Pandavas* (five sons of *Kunti* who fought and won the war of Mahabharat with the help of the Lord Krishna) had escaped during their *banabas* (forest exile) from Hastinapur in India following the order of Kauravs in *Duwapar Yuga*.

At present Panchasee has mixed cultures. People from both Mongolian and Aryan cultures are living in the mountain since centuries back. There are about 75,000 peoples living in the surrounding villages of the mountain (MDO, 2015). The people of Brahmin, Chhetri, Gurung, Bishwakarma, Nepali, Pariyar, Newar, Magar & Thakali caste and ethnic stocks are living side by side. The major villages scattered around the mountain are Bhadaure-Tamagi, Chapakot, Arthar, Chitre, Ramja-Deurali, Arukharka, Bange Fadke and Bangsing Deurali of the three districts of Gandaki region.

From the perspective of modern entertainment and mountain tourism, Panchasee is one of the best locations to view the southern aspects of the Annapurna massif to the north. From this location, the most significant reflections of the snow covered highest geographic range of the world in which Machhapuchhre is visible at the center of Annapurna range. The highest peaks of the range raised above 8000m altitude.

In the recent years, Panchasee has becoming a hotspot of modern tourism with increasing numbers of hikers, trekkers, and nature lovers including foreigners from Pokhara and other parts of the country. It is the reason that Government, private, and community agencies have

already launched various projects on forest conservation, community development, lake and pond renovation, and rural tourism promotion. They are also undertaking other mega projects like road construction and cable car operation to reach to the top of the Panchasee Mountain in a short time. The *sadhak* is susceptible with these modern development phenomena whether it could ensure the protection and promotion of cultural and spiritual richness of the mountain.

Methodology

This research adopts a strategy of *fursad* ethnography to understand the complex relation between spirituality, nature symbol, and tourism from a perspective of a Vedic *sadhak* living in Panchasee Mountain. It includes a long-term study of a single community or people through a slow but continuous sequence of short-term ethnographic research (Rai, 2022). As mentioned by Rai (2022), this research moved through a slow process fulfilling multiple professional and personal responsibilities by the principal author (PA) and other co-authors of this paper. They did not have either any formal obligation to undertake the project and meet any given deadline in advance, hence worked in free-time known as *fursad* in Nepali.

This ethnographic research had started in the last quarter of 2020 when the principal author had met the Vedic *sadhak* in Panchasee Vanjyang. It is the PA's personal interest to know about his spiritual experiences. The research also generated information on the bio-physical and cultural details of Panchasee Mountain from the published materials available in Machhapuchhre Development Organization (MDO), Pokhara and presentations and social media posts. In the last phase, the research followed with series of in-depth discussions and reflections between the PA and the *sadhak* which continued until the end of 2022. Being informed with 'anthropological sensitivity to 'the ethics of reciprocity, morality, and reflexivity' the principal author proposed to the *sadhak* to be a part of the research work and also get involved as a co-producer of the knowledge (Rai, 2022). The *sadhak* accepted the proposal and also involved in the process of preparing this research manuscript.

Spiritual tourism and spiritual quest: a conceptual discussion

Spiritual tourism is frequently related with religious tourism, a short term pilgrimage in a religious site. There are scholars who consider a pilgrim also expects a spiritual or emotional experience as the spiritual tourists do (Singh & Gaitree, 2019). They argue that both modes (religious tourism and pilgrimage) give priority on the quest with the supernatural being or power. However, the most important difference between these two forms of quest is that pilgrimage is situated within the constraints of established religion while spiritual tourism is promoted by a desire for a spiritual experiences and personal growth (Johanna, 2017). Furthermore, in the case of spiritual tourism there are 'individual's underlying subjective or internal reasons, search for meaning and deliberate effort for both inner and outer transcendence and connection particularly in the natural context (Shaohua et al., 2023).

Many scholars have connected this idea of spiritual tourism with the idea of 'New Age spirituality that led to the disjunction of religion and state' and also as a result of the increasing the 'value of individualism and the cult of the autonomous subject, body, and well-being' (Brito, 2020). However, Johanna (2017) is quite critical about this relation and argues that the rise of 'New Age' movement and interest in 'shamanism, paganism and other belief systems of the non-western societies' are not much different from the phenomena of religious tourism. Johanna (2017) examines the new age phenomena is no more than the attempts to rediscover

original religious experiences against the fossilized form of institutionalized religions and dogmatism in the west. In this context spiritual tourism is emerging as a new phenomenon in which the individual tourist has his/her own motivation to travel and expectation in the destination with specific natural and cultural attributes that might contradict with the conventional tourist facilities and services (Shaohua et al., 2023).

Joanna (2017) outlines a model to understand and examine the quest of a spiritual tourist particularly in the western context. It consists three elements in relation to spiritual tourism: the experiences of transcendence, connectivity, and transformation, can be called a TCT model. In this TCT model, the experience of transcendence is understood as an opening for a new perception of reality. Johanna (2017) describes that a spiritual tourist begins his/her journey with a feeling of discontent at 'what is' or 'loss of meaning' that precedes the desire for spiritual quest. It can also be called the first stage of the spiritual quest for the spiritual traveler. The next stage of the quest is to reconnect with the original spiritual experience which was lost in the post-modern western cultures. It is also a process of being spiritually aware or awakened (Johanna, 2017). And the final stage of this spiritual journey is transformation and 'return' of the spiritual tourist to the 'original society' or 'back to humanity'.

This paper has adopted this TCT model to understand the spiritual journey of the Vedic *sadhak* who is living in Panchasee Mountain for more than two decades as mentioned before. It gives special focus on its third stage of spiritual quest having brief description of the two earlier stages of the spiritual quest of the *sadhak*; the transformation and 'return to humanity'. In this stage of his quest, the *sadhak* brings back his spiritual experiences to humanity being a member a mountain society and traditions. There can be criticisms on the adoption of this model as it does not perfectly fit in the context of the *sadhak*'s spiritual quest. For instance, a criticism could be that the *sadhak* did not return to his original society back and involved to share his spiritual experiences in the west or in India. Furthermore, the criticism could also be that the *sadhak* did not remain tourist anymore as he immersed himself into the mountain culture in the later part of his life and his spiritual quest. Instead, he turned a Vedic spiritual *sadhak* first and became a member of a Gurung family in Panchasee after his visit in Panchasee in 2002. This criticism is valid following the TCT model in its mechanical terms. But, if we see the situation of the 'loss of meaning' the *sadhak* faced in his young age and when he decided to go out from the western culture, the way he started his spiritual journey to India, and the spiritual experiences on the 'holiness' and truth of the 'mystic fire' he achieved in Panchasee Mountain in Nepal are quite similar to the situations that many more spiritual tourists from the western society undergo (Johanna, 2017).

Another reason that the *sadhak*'s journey is similar to other spiritual tourist is because he has also transformed himself and brought his experiences back to a society (even though it is not the western society from where he had started his quest) in the Panchasee cultures in central Nepal. In this sense, the trajectory of *sadhak*'s life is not much different from the large number of the spiritual tourists who visit different cultures and ecologies in the Himalayan region and beyond every year. Another aspect of having *sadhak*'s quest significant is because of the value he puts on nature and nature symbols of Himalayan culture as a part of his spiritual quest. Nature is mostly attributed with 'beauty', 'pure' and 'solitude' with the connotation of passivity in the literature of spiritualism (De Pater et al., 2021). The *sadhak* himself had travelled to Himalaya to find the 'holiness' of the mountain. While, the examination of *sadhak*'s spiritual experiences in the context of Panchasee ecology shows that

the nature (the mountain) involves as an active actor vis-a-vis a medium for the experience of 'transcendent' and 'connectedness' which could ultimately contribute for spiritual awakening and transformation and ultimately becomes an inspiration of being active in sharing the experiences to the wider range of global humanity.

Vedic schooling and the *Sadhak's* spiritual quest

The *sadhak* is a Canadian national, born and raised in the western cultures. He had left his country in the year 1967 when he was 19 years old for searching meaning and purpose of his life. Travelling across the East Asia, South East Asia, and Australia he arrived in India in 1968 and ended up in a Vedic Ashram in Pondicherry, South India. He became part of the Sri Aurobindo Ashram, founded in the name of Indian Vedic Scholar and Spiritual master Sri Aurobindo and remained there for very long time. Having back in Canada for couple of times in between, the *sadhak* lived in Indian Ashram for four decades.

The Ashram itself was well known for its Vedic teaching and extension of spiritual knowledge. As a Vedic fellow in the Ashram, the *sadhak* achieved a high level of schooling and knowledge on Vedic principles; and the context of the Vedic cultures in South Asia. This schooling was open to the possibilities of realizing the 'deeper self' and the 'inner being' behind the surface which we mostly consider as ourselves. Being in Ashram, he had opportunities to understand the true nature of the physical world and the inner world, 'the 'Truth', a Reality behind the outer aspects of the physical world' which is a fundamental message that Rigvedic hymns carry (Jamison & Brereton, 2014). However, having been in the Ashram for a very long period, working mostly with the Indian fellows in the strictly administered Ashram, he found himself being apart from his own 'true' nature, the 'holiness' of the fire inside him. He noticed that his surrounding in the Ashram was becoming more and more 'mentalized' or rationalized with administrative and bureaucratic procedures and the overall social surroundings getting westernized. This realization was in itself a crisis, a crisis of his own self which forced him to be out from the Ashram.

Experience of transcendence and 'mystic fire' in Mt. Annapurna

So, he decided to start a new journey up to the Himalaya to find the 'purity' or 'holiness' of his mind and of the nature. It was a second existential crisis that broke out in his mid-life before going to the Himalayas after the first one which took him out from the western culture. He started his spiritual journey to find 'pure and holy' places up in the Himalayas. In 2002, he travelled to Nepal as a spiritual tourist. He visited various parts of the country. But his arrival in Panchasee turned an experience of spiritual transcendence. He found a key for his quest; the 'holiness' of the nature, the 'truth' of the nature, and the law that governs the 'truth' or the 'truth of the truth' which is expressed through symbols and images in the Rigveda (Aurobindo, 1971).

The key was nothing but the 'mystic fire' which is symbolically visible in the Mt. Machhapuchhre in the centre of the Annapurna range from the Panchasee *Vanjyang*. The *sadhak* also became aware about this visual manifestation with the Rigvedic hymns of the Mandala 5 Sukta 19 in Sri Aurobindo's translation (Millar, 2019). Basically, this awareness of the 'mystic fire' in its symbolic form is a solution of his spiritual crisis. Once he saw and faced the 'mystic fire' out in the Panchasee ecology in the Mt. Machhapuchhre and understood the parallel 'mystic fire' that is continuously burning within him, he was just fulfilled. This spiritual fulfillment brought other consequential changes in the whole idea of 'fire', the 'self',

‘truth’, and ‘law of truth’ that he had learned from the Ashram in India. In his experience, all these concepts are part of the same ‘truth’ (Jamison & Brereton, 2014). Basically, these are ‘truths’ of the same single ‘truth’ (Aurobindo, 1971). This knowledge of the secret ‘truth’ was something like a spiritual gift to the *sadhak*, a boon of spiritual wisdom which gave meaning to his spiritual quest. Following this spiritual transcendence, the *sadhak*’s journey followed to the ‘connection’ and ‘transcendence’ back to the humanity which could hardly assumed for the people living in the Vedic Ashram for such a long period.

Connectedness and transcendence of the Vedic *Sadhak*

Following the revelation of the mystic fire, the ‘truth’, a new turn unfolded in *sadhak*’s life. From the same mountain area where he observed the ‘mystic fire’, a key for his spiritual fulfillment, a lady came to his life. The lady was living in her maternal family with the determination not to get involved in marital relation throughout her life. However, once she met the *sadhak* in 2002, she changed and proposed him to have marriage with her. Which was also an uncommon as man usually do propose. Since the lady entered in his life, he stopped his decades’ long affiliation with the Ashram in India and started to share his spiritual experiences living in the mountain cultures. As Johanna (2017) has mentioned, his companionship with the lady was in itself a kind of ‘unplanned’ or a ‘supernatural incident’ who can be symbolized as a ‘helper’, a medium to support his spiritual passage, a natural event that mostly occurs with every spiritual quester one way or other.

There is no doubt that the *sadhak*’s relationship with the lady is not just a passage to the humanity but also turned as his comeback to humanity. This return is a very crucial stage of any spiritual quester. Because, being in the social context of the mountain society, it is extremely challenging not to lose the balance of the spiritual awareness that have been achieved in the previous stage of his quest. This is also a part of the strategy of balancing inner and outer selves. The *sadhak* have managed this balance in both of these sides in a very special way. On the one hand, he is able to carry the truth of the ‘mystic fire’ (the fire of the ‘self’ and the ‘true’ nature) living in Panchasee *Vanjyang* from where he has also opportunity to observe the view of ‘fire’, every morning and evening when the sun throws its low intensity rays on the snow-clad walls of the Himalaya. On the other hand, he is actively participating in the cultural life of the mountain society as a member of the lady’s family.

Just as a continuation of the Vedic practice from the Ashram in India and the strategies to balance the inner self, the *sadhak* performs the rituals of worshipping wood fire, gazing to the Mt. Machhapuchhre which is in the center of the Annapurna range, and visiting various holy sites around the mountain such as rocks, trees and water bodies. These performances are not only important as the part of his everyday life but also as the conscious efforts to bring his inner experiences in the surface. On the part of his outer connection, the *sadhak* is highly energized and self-motivated to visit various other holy sites and identify their Rigvedic relevancies in Pokhara valley and beyond. Some of the places, he visited in the previous years in Gandaki region were; *Daharelake* in Syangja, *Galeshwordham* in Myagdi, and *Devghat* in Tanahun. Very recently, he has completed a two round visit in several spiritual sites in Kathmandu valley; particularly *Bajrayogini* in Sankhu and *Bangalamukhi* in Lalitpur which he prefers to call Rigvedic sites as a part of having physical connection with the living Rigvedic traditions in Kathmandu valley. He is also sharing his spiritual experiences with his local and global friends and families in Nepal and abroad through photography of the holy sites with detail verbal illustrations in the form of books, websites and social media posts, and

interviews and talks on local radio and TV stations.

Now, it is essential and important to outline some of the fundamental spiritual experiences in his transcendental phase of spiritual quest that the *sadhak* has been sharing with the people in his network. The *sadhak*'s spiritual experiences extended both to his inner and outer realms of life following the understanding of 'mystic fire' in the visual manifestation of Mt. Machhapuchhre and its association with the Rigvedic hymns of 'Mandala 5 Sukta 19'. He has identified that the secret of the 'mystic fire' in Machhapuchhre in the Annapurna range is also a part of the 'fire' that is living within us. In the Rigvedic symbolism, Machhapuchhre is a 'son' and the entire Annapurna range is 'a lap of the mother' or 'mother' (Aurobindo, 1971). So, it is also a secret of the son-mother relation which is also interpreted as the relation of the 'soul' (or the 'self') and the 'body' (Millar, 2019). These two symbols are different but inextricable from one another in Vedic literatures. Therefore, the *sadhak* considers that the fire is a 'self' which is 'true' that sits under/with or inside the water of our corporal body as Machhapuchhre (son) sits in the lap of the mother Annapurna (Talghari, 2000).

The manifestation of Machhapuchhre is symbolic. The *sadhak* considers that the inner dimension of all the physical nature (living and non-living) around us exists in the form of 'fire'. The best example of understanding their inner dimension is wood fire which is still common in Panchasee households for cooking food. Most importantly, he validates the Rigvedic knowledge that all entities; both living and non-living, are simply a different manifestation of the same fire (Werner, 1977). And this truth is part of the same single truth as it is mentioned in the Rigveda *tad ekam* (Agrawala, 1960). In Vedic terms, it is the law of the law that the *sadhak* has realized being in the Panchasee ecology.

The second part of the spiritual experience of the fire symbol is about the character of the fire. The *sadhak* argues that the 'self' and nature (body) are not 'mundane', dirt or useless as it identified in various other spiritual traditions such as Buddhism, Christianity, and various sects of Hindu traditions. They consider all the existence that we have around as 'illusion'. While, the *sadhak* assumes the world around us (physical) and within us (spiritual) are both real and they manifest in the form of 'fire' which needs special attendance. There is a common ignorance about the character of fire. He explains that fire needs special care as it is mystic. If there is no 'one' to care for the 'fire' the fire would simply disappear and it applies same to the 'truth' of the inner self; i.e. inner fire. If there is no one to care or carry the 'truth' it will just simply disappear as fire does. This is a very special character of fire which is called as 'mystic'. It is there and it is not there at the same time. Therefore what is essential for any *sadhak* is to attend the fire which is a Vedic practice of attendance or caring of the symbolic 'truth'. He further adds, it also happens in the case of the visual manifestation of Mt. Machhapuchhre in the Annapurna range. It is only in the morning and in the evening time that the whole Annapurna range turns as a fire place in which the Machhapuchhre turns as a flame of fire pointing upward. However, this visual manifestation could not last forever and not for all. We must observe it to get to know the fire, if there is no observer to view or to attend this symbolic 'mystic fire' it just gets disappears. The principal message is that the *sadhak* wants to give through the concept of the 'mystic fire' is that the 'truth', and 'self' are always relative with their outer aspects which is mostly 'feminine'. And it is the feminine gaze or care that keeps the fire and the truth alive. For instance, Mt. Machhapuchhre is fire; masculine, while the Annapurna is water/mother; feminine. And the Rigveda gives equal emphasis on both of them which is the part of his third spiritual message.

The *sadhak*'s third main spiritual message is that the Himalayan culture is Rigvedic because it is mediated by fire with high respect to the feminine nature symbols. In his experiences, throughout the year Panchasee families are involved in worshipping fire in one way or other. Every household worships fire as a divine form in the mountain families. There is no special occasion essential to worship fire but it is a part of their everyday life. For, instance, before giving food to the family member, mother in the mountain family gives back (offer) a part of rice to the fire. It is a cultural practice to pay respect to 'fire'. The *sadhak* has also observed the annual *puja* that takes place on the day of *Balachaturdasi* in Panchasee Mountain. On the day hundreds of pilgrims climb up to the mountain and worship 'fire' and put fire plate on Panchasee lake. For him, worshipping fire is significant because it symbolizes livingness, power, and creativity and inspires people to remain active, not passive as in various other faiths, which is the Rigvedic (Millar 2019). Likewise, *sadhak* argues, the fire which symbolizes masculine power is embedded with water, the feminine power (such as the mystic fire of Machhapuchhre with Annapurna, fire lamps in the lake of Panchasee) which is the true meaning of the Rigvedic knowledge.

Conclusion

The *sadhak*'s quest for transcendence and connectivity is related with the traveling for the realization of spiritual 'truth'. As mostly other spiritual tourists do, his quest in his mid-life followed the subjective turn outside of institutional religious framework, no matter even if it was an Indian Vedic Ashram which was open for every turn of spiritual possibilities and realization. This case also indicates the significance of travel in different ecological and cultural context for the spiritual quest. Another important aspect of spiritual quest in the study of *sadhak*'s life is that he did not follow any specific religious faith or suggesting people to follow any standard route. In addition, he is also trying to bring back the Rigvedic understanding of nature and divinity in discourse which disqualifies the 'personification' of the divinity of nature and puts emphasis on the feminine values and principles in religious and cultural life. The *sadhak* is also active in 'discursive shift' of his subjective self. He is still visiting the large numbers of holy sites and sharing his experiences about the Rigvedic nature symbols and their significance in the Himalayan cultures.

This case of a Vedic *sadhak*'s spiritual quest brings the travel or tourism, nature, and culture (particularly fire symbol) together and shows them as the necessary elements to prepare for the spiritual quest. In terms of tourism promotion, the *sadhak*'s travel was different from the conventional concept of religious tourism and its destinations. The destination in the case is the nature or the mountain, as a special ecology for his spiritual realization. Furthermore, the destination is not an isolated geography rather it is special social and cultural site that provides a passage to bring back his spiritual experiences and wisdom to the wider audiences.

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Rising Participation of Non-Sherpa in Mountaineering in Nepal

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Abstract

Sherpa and mountaineering are almost synonymous in Nepal. Once there was a time when Sherpa without mountaineering used to be regarded as half empty and mountaineering without Sherpa would be full empty. But the time has changed now and many numbers of non-Sherpa are taking part in the mountaineering sector. The increasing participation of non-Sherpa in mountaineering has supplemented this sector, on one hand, but in another, their participation has challenged and questioned the Sherpa's legacy and monopoly in the mountaineering. In this regard, the paper analyzes the dichotomous relationships between the Sherpa and the non-Sherpa mountaineers in Nepal. The paper is based on primary data obtained through interview schedule. Sixty one (Sherpa 46 and non-Sherpa 15) mountaineers were chosen for the research. Unstructured interviews and key informants interviews along with *kuragraphy* are the supplementary tools for collecting the information. Interestingly, the mountaineers have mixed views regarding the participation of both the Sherpa and the non-Sherpa in the mountaineering sector. Regarding the preferences for working together in mountains 65.2 per cent Sherpa mountaineers preferred Sherpa as fellow workers but none of the Sherpa informants preferred non-Sherpa whereas 13.3 per cent non-Sherpa informants preferred Sherpa as fellow workers. Similarly, 54.3 per cent Sherpa mountaineers preferred Sherpa for hiring them in mountaineering but none of the Sherpa mountaineers preferred non-Sherpa mountaineers and vice-versa. It seems that both the Sherpa and the non-Sherpa mountaineers are ethnocentric thus a competitive rivalry looms large among them. This study is an attempt to understand the impact of the non-Sherpa's rising participation in the mountaineering fields.

Keywords: mountaineering, Sherpa, non-Sherpa, caste, ethnicity

Introduction

This paper aims to explain the Sherpa and non-Sherpa influence in the sectors of tourism and mountaineering. The Sherpas are not only famous for high altitude workers but also hold a major business in tourism and mountaineering sectors. There was a time when tourists wanted Sherpa workers as guides and other supportive staff in the trekking and mountaineering. As a result, the non-Sherpa tourism workers called themselves Sherpa, because tourists wanted Sherpa (Ortner, 1999) and such a situational Sherpa-ness, was because of improving labor hierarchy, avoiding discrimination and appeasing foreigners (Frydenlund, 2018). Hence, the term 'Sherpa' is also indicated the post (assistant guide) in trekking rather than identifying the ethnic group 'Sherpa'. But time has changed and many non-Sherpas participate in both tourism and mountaineering sectors. Many non-Sherpas are climbing mountains as guides for mountaineers and trekkers. As Ortner (1999) writes:

...a number of non-Sherpas have achieved success without pretending to be Sherpas, and this has been a source of ethnic pride for the groups in question. The first non-Sherpa Nepali to reach the top of Mount Everest was a Tamang, Sambhu Tamang, with Italian expedition of 1973... On that second expedition, a young man by the name of Narayan Shrestha became the first Newar to reach the top of Everest. The French Everest expedition of 1988 included one Gurung and one Tamang among the high altitude Sherpas. (p. 256)

Western scholars spend much time on the Sherpa, either admiring their hospitality, honesty, hard-work, cheerfulness and as a lifeline of Western tourists in trekking and mountaineering as porters, high altitude workers and climbers (Fuerer-Haimendorf, 1964; 1984; Ortner, 1989; Fisher, 1990; Brower, 1991; Stevens, 1993;) or disagree with the metaphors (Adams, 1996). Adams (1996) explains Sherpas' idealness a fake and constructed for achieving material benefit from Western tourists. They do mountaineering for their own fame and dignity. Hence, the Sherpas are to be subjectively interpreted (Luger, 2000).

Whatever else the scholars have stated about the Sherpa, mountaineering is their dignity and pride (Ortner, 1999; Brower, 1991) that has begun with the stepping on the Mt. Everest summit by Tenzing Norgay and Edmund Hillary in 1953. This feat on the Mt. Everest made the Sherpa world-wide famous and popular. They are famous as skilled high-altitude workers and are equally known for their hard work, dedication and honesty. The tourists also perceive Sherpa as ever-smiling people even on the hard days in the mountains. But today, non-Sherpa people of Nepal are also taking part in the mountaineering and their number is increasing every year (MoCTCA-2020). The main causes of non-Sherpas' participations in trekking and mountaineering are several social and economic opportunities in tourism and mountaineering, outmigration of the Khumbu's Sherpa from their traditional Sherpa villages and in-migration of the non-Sherpa in Khumbu (Shrestha, 2018b). Such an outmigration of Sherpa and in-migration of non-Sherpa people inside Khumbu illustrate the search of better opportunities. Both types of migration created opportunities and the challenges in the tourism and mountaineering. The participation of non-Sherpas in the tourism and mountaineering sectors thus, has changed the Sherpa's monopoly in this sector.

In this a context, the paper analyzes the ever growing competitive interrelationship between the Sherpa and the non-Sherpa' workers in tourism and mountaineering sector in Nepal. The research also aims to analyze the perceptions of both the Sherpa and the non-Sherpa mountaineers regarding their participation and interrelationships during the period of mountaineering in Nepal.

Material and method

This paper is based on both primary and the secondary data. Semi-structured interview schedule, unstructured interviews, key informants' interviews and kuragraphy are the sources of primary data which was conducted in different months of 2022/ 023 inside Kathmandu Valley. The data is carried by the purposive and snowball sampling with 46 (75.40%) Sherpa, and 15 (24.60%) non-Sherpa informants. These sampling methods are useful for the present study for selecting the Sherpa and non-Sherpa informants rationally. Probability sampling may exclude some of the caste and ethnic based informants that the research really needed. The non-Sherpa informants incorporated Gurung, Tamang, Rai, Magar and Chhetri. The table details about the sample population for the study.

Table 1*Caste and ethnicity of sampled mountaineers*

S. N.	Caste/Ethnicity	Male	Percent
1	Sherpa	46	75.40
2	Gurung	7	11.50
3	Tamang	5	8.20
4	Rai	1	1.63
5	Magar	1	1.63
6	Chhetri	1	1.63
	Grand Total	61	100

Source: Field study, 2022

At the same time adequate secondary information through books, journal articles, reports and other forms of resources such as interviews on YouTube and so on have been used for the study.

Interethnic interface in tourism

Tourism is a process of social interaction. The social interaction not only takes place between guests, hosts and agents but also among the hosts' communities. Hitchcock (1999) stated that social interaction within tourism often involves the study of interethnic relations. Hitchcock focused on the cross-cultural relationships among ethnic communities. Tourism brings many types of people together into contact who are not only strangers to one another but are also members of different ethnic groups. The forms of social and cultural interactions are not similar all over the world. The level of interaction differs from place and time. Wood (1997) presented several cases of interethnic relationships in various parts of the world. Such as competition, unequal relationship, ethnic based division of labor and low wages for marginalized ethnic group in Xinjiang, China; power struggles in Fiji and rivalry relationship between Tamang and Sherpa in Khumbu.

Hilliman (2009) examined the relationship between Tibetan and non-Tibetan migrants due to the promotion of tourism in Tibet. The author stated that Tibetans are deprived of high paid jobs in the city because of the migration of non-Tibetans. The expansion of tourism set a challenge for ethnic identity formation and ethnic relations in China. The author further states:

Ethnic consciousness is further enhanced by the frequent Tibetan-non-Tibetan encounters that tourism brings. Ethnic consciousness may rise through the pleasant experience of discovering different attitudes, tastes, or customs in others, or less pleasure through the experience of missing out on higher-paying work that goes to non-Tibetans. (p. 3)

Tourism is responsible for changing, constructing and reconstructing ethnic identity. Becoming conscious about their ethnicity is related to maintaining uniqueness and being different from others.

Another case was presented by Adams (1997) about the battle between two ethnic groups in Sulawesi, Indonesia. Adams (1997) presented the cases of the battle over guiding rights.

When the government of Indonesia made licenses compulsory for guiding tourists, the local guides of the Torajans community lost their jobs with the inclusion of other Muslim, Buginese and Chinese guides. These non-Torajanas guides are paid much more than locals but the new guides misrepresented the predominantly Christian Torajans as pagan backward. Guneratne (2001) presented a case of Chitwan, Nepal where non-Tharu guides misrepresented the Tharu as stating them 'jangali' people. However, different ethnic-based organizations exist in Khumbu to ensure the economic, social, cultural, and natural resources. The Sherpa, Tamang, Rai have established their own ethnic-based organizations that not only identified themselves as separate ethnic groups but also support to balance of power among various ethnic groups in Khumbu (Shrestha, 2018b). Shrestha (2018b) writes:

The ethnic based organizations has not only incorporated their ethnic identities but these organization also has helped to maintain the structure of power within the same ethnic group. The enforcement of local Sherpa on non local Sherpas or Tamang has clearly indicated their power exercise on them. Such activities of enforcement and exercise of power on the different parties encourages the other people to be united together for their betterment and against the dominant segments. (p.269)

The ethnic-based division of labour prevails in trekking and mountaineering in Nepal. Caste and ethnic-based discrimination are common in several tourists' destinations in Nepal (Frydenlund, 2017; Shrestha, 2018b). Literatures on tourism show various forms of interethnic relations broadly covering social, cultural, economic and regional (land-based) interaction in different tourism destinations.

Trekking and mountaineering create not only socio-economic mobility of the concerned people but also encourage migration. The rich trekkers and mountaineers gradually leave their place of origin and out migrate towards the sophisticated towns but the poor who just see opportunities in these sectors work in various difficult situations and migrate towards the highest altitudes as in Khumbu.

Sherpa and non-Sherpa interface in mountaineering

Trekking and mountaineering require physical strength along with skills and experiences. Hence, it may not require a particular caste or ethnicity for its success. But in Nepal, the Sherpas are taken as active, honest, hardworking and cooperative people who can climb the mountains and support the Western climbers as mountain guide, trekking guides and porters. That's why they are highly demanded by Western tourists as their supporters. The involvement of the Sherpas from the beginning of the tourism and mountaineering proves their indispensability in this sector.

But today non-Sherpa people are also climbing the mountains every year. These people are also able to make and break records in mountain climbing. But the number of non-Sherpa climbers is relatively very few. This section of the paper presents the frequency of summiteers on the basis of nationality, caste and ethnicity on three different mountains in Nepal (Mt. Everest-8848.86m., Mt. Annapurna I, 8091m. and Mt. Amadablam, 6814m.)

Summits on Mt. Everest (8848.86m.)

Since the first summit by Tenjing and Hillary on May 29, 1953, Mt. Everest has been climbed 6507 times successfully. Among them, the male mountaineers climbed it 6036 times (92.76%) and 407 (7.24%) times for females. If we see data on the basis of nationality, foreign climbers

climbed it 3411 (52.43%) times and 3096 (47.57%) times by Nepali climbers. It shows that the numbers of Nepali summiteers/ summits are higher than any other particular foreign countries' summits (MoCTCA, 2020). While analyzing the same data in the context of Nepal by sex, the number of male summiteers/ summits is higher than the female. The male Everest summiteers/ summits are 3044 (98.32%) and the female is only 52 (1.68%).

However, the following section of this paper analyzes data on the basis of the caste and ethnicity of the summiteers that have successfully summited several mountains.

Table 2

Caste and ethnic composition of the Mt. Everest summiteers of Nepal from 1953-2019

S. N.	Caste/ ethnicity	Frequency	Percent
1	Sherpa	2879	93.00
2	Tamang	68	2.19
3	Brahmin/Chhetri	54	1.74
4	Gurung	35	1.13
5	Magar	22	0.71
6	Newar	15	0.48
7	Rai	11	0.34
8	Shahi	03	0.09
9	Others	09	0.30
	Total	3096	100

Source: MoCTCA-2020

It is a fact that the Sherpas have contributed a lot in the sectors of tourism and mountaineering. They have showed their bravery from the early history of mountain climbing including the conquering of the world's highest mountain Mt. Everest. They make and break the climbing records in each season. Talking about the summit of Mt. Everest, Sherpa climbed it 2879 times. It means among the total 3096 summits on Mt. Everest from the year 1953 to 2019 by Nepali summiteers, 93 per cent of summits were made by Sherpas and only 7 per cent of the summits were made by non-Sherpas summiteers. Among non-Sherpas, Tamang (2.19%), Brahmin/Chhetri (1.74%), Gurung (1.13%), Magar (0.71%), Newar (0.48%), Rai (0.34%), Shahi (0.09%) and others (0.30%) made summits on Mt. Everest (MoCTCA-2020). The disparities on the data of climbing Mt. Everest by various caste and ethnic group are not only interesting but also raise multiple academic inquiries on the least participation of the non-Sherpas in the mountaineering.

Summits on Mt. Annapurna I, 8091m

Mt. Annapurna is another famous mountain for the mountain expedition for both Nepali and foreign climbers. Mt. Annapurna was first summited by Maurice Herzog in 1949. Thereafter, hundreds of climbers have summited Mt. Annapurna. The data show that Mt. Annapurna was summited 309 times; interestingly, Nepali climbers summited it one hundred times and rest of the other by the foreign climbers from the different countries from 1949 to 2019 (MoCTCA, 2020).

Table 3

Caste and ethnic composition of the Mt. Annapurna summiteers from 1949 - 2019

S. N.	Caste/ ethnicity	Frequency	Percent
1	Sherpa	94	94
2	Tamang	5	5
3	Magar	1	1
	Total	100	100

Source: MoCTCA, 2020

Talking about the Nepali summiteers on Mt. Annapurna, dominant climbers were the Sherpas. The data show that 94 percent summits were made by Sherpa, 5 percent by Tamang and one percent by Magar. It shows that non-Sherpa summiteers are nominal on Mt. Annapurna.

Summits on Mt. Amadablam 6814m

Regarding the summits on the Mt. Amadablam, participation of the non-Sherpa climbers has increased. All total 12.67 percent summits were made by non-Sherpa (Tamang 4.66, Gurung 3.33, Brahmin/ Chhetri 2.66, Magar 1.33 and Newar 0.66 percentage) climbers on Mt. Amadablam.

Table 4

Caste and ethnic composition of the Mt. Amadablam summiteers in 2019

S. N.	Caste/ ethnicity	Frequency	Percent
1	Sherpa	131	87.33
2	Tamang	7	4.66
3	Gurung	5	3.33
4	Brahmin/ Chhetri	4	2.66
5	Magar	2	1.33
6	Newar	1	0.66
	Total	150	100

Source: MoCTCA, 2020

Mt. Amadablam is selected for the comparative study of the summiteers. This mountain is chosen because of its height. The height of Mt. Abadablam is 6814m only. This study tries to see whether the climbing frequencies of the Sherpa and non-Sherpa differ with difference of the height of the mountains. The assumption made is somehow close to the reality that the number of non-Sherpa's climbing frequencies has been increased in Mt. Amadablam. The data show that 93 percent summits were made by the Sherpa on Mt. Everest, 94 percent on Mt. Annapurna I; but only 87.33 percent summits were made by the Sherpa climbers. This tendency shows that the non-Sherpa climbers were making attempt on the mountains that have comparatively lower height.

Caste and ethnic politics in mountaineering

The Sherpa and non-Sherpa informants have their own views and opinions regarding significance and indispensability of caste and ethnicity in tourism and mountaineering sectors. This section of the paper has tried to analyze their perceptions through their answers in many issues.

Caste and ethnic status of company owner

Most of the mountaineers in Nepal are paid workers. Mountaineering is their source of earnings and means of livelihood. Most of them do not have their own mountaineering expedition company. The mountaineers do their jobs from the other owners' company. Even the world famous climber such as Sanu Sherpa does not have his own company.

In this regard, the researcher asked the mountaineers about their owners' caste and ethnic status. Identifying the owners' caste/ ethnic status reveals the climber's preference to work with particular caste and ethnic people and vice-versa.

Table 5

Caste and Ethnic Status of Company Owner

S.N.	Caste/ Ethnic status	Number	Percent
1	Sherpa	44	72.1
2	Brahmin/ Kshetri	10	16.4
3	Gurung	3	4.9
4	Tamang	2	3.3
5	Magar	1	1.65
6	Newar	1	1.65
	Total	61	100

Source: Field study, 2022

The data show that 72.1 per cent of mountaineers work in Sherpa's company and 27.9 per cent work in non-Sherpa's (Brahmin/ Chhetri 16.4, Gurung 4.9, Tamang 3.3, Magar and Newar each 1.65 per cent) company. It clarifies the increasing participation of non-Sherpas in the mountaineering business along with climbing the mountains.

Composition of caste/ethnic status of the mountaineers' co-workers

In Nepal, some works have been assigned to specific people based on their caste and ethnic hierarchy. Priestly works are to be done by the Brahmins and some works are designed only for a scheduled caste. But in mountaineering, the division of labour does not depend upon the mountaineers' caste and ethnic status. Mountaineering is a hard adventure which requires physical strength, psychological determination, courage, economic well-being and so on. But, caste, ethnicity and gender-based status also play an important role in several aspects including mountaineering in Nepal.

It is good to analyze whether one's caste and ethnic status bring any differences in work efficiency. Does one really choose fellow workers from his/her own caste and ethnic group? To know the answer of these several queries I have asked the informants about the caste and

ethnic status of their co-workers.

Table 6

Composition of caste/ ethnic status of the mountaineers' coworkers

S. N.	Caste/ethnicity	Sherpa's views		Caste/ethnicity	Non-Sherpas' view	
		Number	Percent		Number	Percent
1	Sherpa	37	80.4	Sherpa	06	40
2	Non-Sherpa	00	00	Non-Sherpa	01	6.7
3	Mixed	09	19.6	Mixed	08	53.3
Total		46	100		15	100

Source: Field study, 2022

Regarding such questions 80.4 per cent of the Sherpa informants replied that they have Sherpa coworkers in the mountaineering, 19.6 per cent of the Sherpa informants stated that they work with both Sherpa and non-Sherpa (mixed) coworkers whereas none of the Sherpa informants stated that they work only with non-Sherpa mountaineers. In contrast to Sherpa, 40 per cent non-Sherpa viewed that they worked with Sherpa, 6.7 per cent with worked with non-Sherpa but 53.3 per cent, i.e., majority of the non-Sherpa informants worked with both Sherpa and non-Sherpa (mixed) co-workers. The data indicate that there is an influence of caste and ethnic status in the mountaineering sector.

Mountaineers and their comfort to work with other castes/ethnicity

One can have several queries regarding the workers' comfort, cooperation or conflict while working together in tourism and mountaineering. The situation of comfort, cooperation or conflict may be contextual and may not be applied between the Sherpa and the non-Sherpa workers in tourism and mountaineering. The dichotomous interactions may take place within the Sherpa or non-Sherpa mountaineers. However, present study has focused to analyze the various forms of situations between the Sherpa and the non-Sherpa mountaineers while working together. That's why I put forwarded a query to both Sherpa and non-Sherpa informants regarding their ease and comfort to work with a particular caste or ethnic status.

Table 7

Views of mountaineers regarding their easiness to work with other castes and ethnicity

S. N.	Caste/ethnicity	Sherpa's views		Caste/ethnicity	Non-Sherpas' view	
		Number	Percent		Number	Percent
1	Sherpa	30	65.2	Sherpa	02	13.3
2	Non-Sherpa	00	00	Non-Sherpa	02	13.3
3	Mixed	16	34.8	Mixed	11	73.4
Total		46	100		15	100

Source: Field study, 2022

The perception of both the Sherpa and the non-Sherpa mountaineers is quite interesting. About 65 per cent Sherpa informants said that they are comfortable to work with Sherpa co-

workers and 34.8 per cent Sherpa accepted mixed people while working together on the mountains whereas only 13.3 per cent non-Sherpa feel comfortable to work with Sherpa. A huge number (73.4%) of non-Sherpa informants have chosen mixed people as comfortable to work. It means most of the non-Sherpa wanted to avoid Sherpa as their fellow workers. The data also shows that none of the Sherpa informants have chosen non-Sherpa as a comfortable fellow worker. In contrary, 13.3 per cent non-Sherpa informants have chosen non-Sherpa fellow workers in the mountaineering sector.

Preference to provide jobs

Mountaineering is one of the most economically lucrative jobs in Nepal. The job is also interesting because of its nature. Being close to nature, playing with snow-topped lofty mountains, amazing scenes and also a lot of troubles make mountain climbing exciting, risky and challenging too. Mountaineering is teamwork. Proper coordination, cooperation and communication among the mountaineers bring success to every climber. For the success, one should be very much aware about choosing the fellow mates or giving jobs to suitable mountaineers who can handle all the clients and other issues relating to the mountain climbing. But, the question is that who can handle the client well and solve the several issues during the period of mountaineering. Does any caste or ethnic specific people require for the successful mountaineering? Or, mountaineering solely depends upon the individual's skill and other qualities?

Table 8

Views of mountaineers regarding their preference to provide jobs

S. N.	Caste/ethnicity	Sherpa's views		Caste/ethnicity	Non-Sherpas' view	
		Number	Percent		Number	Percent
1	Sherpa	25	54.3	Sherpa	00	00
2	Non-Sherpa	00	00	Non-Sherpa	3	20
3	Mixed	12	26.1	Mixed	05	33.3
4	Qualified and experienced	09	19.6		07	46.7
Total		46	100		15	100

Source: Field study, 2022

I have asked the informants about their preference to provide jobs to the mountaineers. Regarding this, 54.3 per cent Sherpa intended to provide mountaineering job to the Sherpa, 26.1 per cent for mixed people and 19.6 per cent chose the qualified and experienced. Similarly, none of the non-Sherpa prefer Sherpa, 46.7 per cent non-Sherpa have chosen skilled and experienced mountaineers whereas 33.3 per cent have chosen non-Sherpa as the base for providing jobs. Obviously, mountaineering has to require a skill and experience mountain guide beyond any caste and ethnic group. However, the situation was not as I expected. There is ample place for caste and ethnic issues in the mountaineering.

Effects of caste and ethnicity on mountaineering

The data show that there are some sorts of inter-relationship between mountaineering and caste- ethnic issues. To make this issue much clear, I have asked my informants whether mountaineering is affected by the caste and ethnic status of the mountaineers. In response to

this question, 45.7 per cent Sherpa said yes but 54.3 per cent of them rejected whereas 73.3 per cent non-Sherpa saw the effects of caste and ethnic status in the mountaineering. Only 26.7 per cent non-Sherpa denied the effects of caste and ethnic issues in the mountaineering. Altogether 52.5 per cent informants replied that the caste and ethnic status of the mountaineers affect the mountaineering but 47.5 per cent informants denied it.

Table 9

Views of mountaineers regarding effects of caste and ethnicity on Mountaineering

S. N.	Perceptions	Sherpa's views		Perceptions	Non-Sherpas' view		Total	Percent
		Number	Percent		Number	Percent		
1	Yes	21	45.7	Yes	11	73.3	32	52.5
2	No	25	54.3	No	04	26.7	29	47.5
Total		46	100		15	100	61	100

Source: Field study, 2022

It seems that the non-Sherpa informants feel that caste and ethnic based inequality for providing jobs, remunerations and other opportunities. The data also show that Sherpa mountain guides prefer Sherpa coworker rather than non-Sherpa. The Sherpa Mountain guides view that the tourists also prefer Sherpa workers as their assistant.

Queries regarding caste and ethnicity by the tourists

Two contradictory views are raised by the Sherpa and non-Sherpa mountaineers regarding the tourists' preferences for selecting their assistants. The Sherpa mountaineers said that the tourists prefer Sherpa mountain guides as their assistant. "The tourists search all the documents of experiences and make several queries on the qualifications of the non-Sherpa mountain guides. But, if there is Sherpa, they do not make any queries. So, I prefer Sherpa mountain guides in my team," (personal communication with Sherpa mountain guides, March-10, 2022). But, the non-Sherpa informants reject the statement. The non-Sherpa informants stated that they have never experienced of being asked their caste and ethnic status by the tourists. A non-Sherpa informant states:

I struggled much for climbing the mountains because I didn't get chance on the Sherpa's company that I spent many years in trekking up to base camps, never given chance because Sherpa prefer Sherpa rather than non-Sherpa, Sherpa never gives chance to other non-Sherpa. But, caste and ethnicity has no role in mountaineering; neither the tourists ask only Sherpa helpers. May be tourists read the books which exaggeratedly appreciated Sherpa only as the best climbers. The tourists never asked me whether I am Sherpa. The tourists just judge on the works rather than ethnic identity. (Non-Sherpa mountain guides Personal Communication, February, 15- 2022)

Table 10

Views of mountaineers regarding tourists' queries about caste and ethnicity

S. N.	Perceptions	Sherpa's views		Perceptions	Non-Sherpas' view		Total	Percent
		Number	Percent		Number	Percent		
1	Yes	40	87	Yes	14	93.3	54	88.5

2	No	06	13	No	01	6.7	07	11.5
Total		46	100		15	100	61	100

Due to these contradictory statements, I raised a question to all 61 informants regarding the tourists' queries regarding the caste and ethnic status of the mountain guides. In response to this question 87 per cent Sherpa and 93.3 per cent non-Sherpa agreed that tourists ask their caste and ethnic status during the trekking and mountaineering but 13 per cent Sherpa and 6.7 per cent non-Sherpa informants stated that the tourists do not ask their caste and ethnic status.

Discussions

Caste system is deeply rooted in Nepal. There was a time when the state institutionalized caste system in Nepal. Caste was the main base for the rule. The rulers enforced the caste system to regulate the society in the past. Along with Jayasthiti Malla's caste system in the Middle Age to Jung Bahadur Rana enacted the Muluki Ain with hierarchies of caste system, caste based behavior and works of the people. Even the rewards and punishments were determined by the caste hierarchy of the individual and the group (Hofer, 2004).

Today, our everyday lives, ideas, thought, behavior, practices and so on are somehow influenced by our respective caste and ethnic category. The food that we eat, and cook at the kitchen or the life partner we choose, all are directly influenced by our caste and ethnic status. Some profession is totally caste based such as being *purohit* and doing *puja* by the high caste Brahmin status only and some works by the scheduled caste. Caste system is still prevalent in Nepal and highly practiced in the rural areas of Nepal.

In contrast to many other sectors, mountaineering has not been influenced by the caste system in Nepal. The high caste or lower caste keeps no value and no meaning in the mountaineering. Neither the high caste Hindu Brahmin has a high rank due to his birth status such as caste nor do the ethnic groups fight against the high caste people as ethnic movement or identity politics in the mountaineering in Nepal. It is because mountaineering depends upon physical strength, skills, experiences, psychological determination and so on.

Interestingly, there is Sherpa and non-Sherpa politics in the mountaineering sector in Nepal. The Sherpa has a long history, legacy and hegemony on the mountains and mountaineering in Nepal. It seems that the Sherpa do not want to lose their legacy and monopoly in this sector. Preferring to Sherpa coworkers, being willing to provide jobs to the Sherpa or making unique narratives regarding Sherpa on the mountains and mountaineering are examples of how Sherpa want to maintain their legacy and monopoly in the mountaineering sectors. A Sherpa mountain guide, owner of a mountain expedition company, multiple times Mt. Everest and other mountains summiteer states:

I choose Sherpa mountaineers because the Sherpas adapt easily than non-Sherpa on the mountains. The Sherpas are in priority because foreign mountaineers have high belief on Sherpa rather than non-Sherpa climbers. If I put forward non-Sherpas climbers as their guides the foreign climbers, ask several queries on the non-Sherpas' climbers ability. The foreign mountaineers ask their bio-data. But, they ask nothing if I put forward Sherpas as their assistants or guides. (Mr. T. Sherpa, Personal Communication, December, 9- 2022)

This narrative is supported by the other Sherpa mountaineers. Present study also reveals that 72.1 per cent trekking and mountaineering company was owned by the Sherpa and this is one

of the main reasons for many Sherpa mountaineers' participation. In addition to this 65.2 per cent Sherpa workers prefer to work with fellow Sherpa but none of them intended to work with non-Sherpa workers. In other hand, 13.3 per cent non-Sherpa felt comfortable to work with fellow Sherpa workers. The data show the dichotomous relationships between the Sherpa and the non-Sherpa mountaineers in Nepal.

It might be true that the Sherpas have much more adaptive capacity than any other non-Sherpas because the Sherpas are high mountain dwellers. But recent trends of non-Sherpa's participation, their success and records compel everyone to rethink the statement. However, it may be true that the tourists ask Sherpa mountain guides because of Sherpa's fame all over the world. But, the story does not end easily. The narratives of the non-Sherpa are quite contradictory with Sherpa. They stated that the Sherpa mountain guide and company owner do not want to provide jobs to the non-Sherpa. Their unwillingness to provide job is not because of non-Sherpa's inability to work at the high altitudes but it is because of nepotism or *afno manchhe*. The non-Sherpa workers said that most of the company owners are Sherpa so that they offer this job to Sherpa. A 44 years old non-Sherpa from lower part of Solukhumbu district who scaled Mt. Everest 5 times including one from Tibet side. He also summited Mt. Lhotse (8516m.), Cho-o-yu (8201m.), Manaslu (8167m.), Annapurna (8091m), Mt. Ratnachuli, Amadablam, Derachuli, and other several peaks states:

I struggled much for climbing the mountains because I didn't get chance on the Sherpa's company that I spent many years in trekking up to base camps. He (company owner) never gave me chance because Sherpa prefer Sherpa rather than non-Sherpa, Sherpa never gives chance to other non-Sherpa. Although caste and ethnicity has no role in mountaineering; neither the tourists ask only Sherpa helpers. May be tourists read the books which exaggeratedly appreciated Sherpa only as the best climbers. The tourists never asked me whether I am Sherpa. The tourists just judge on the works rather than ethnic identity. Nepotism works in mountaineering. I may get chance earlier if I were Sherpa, they ignore other non-Sherpa because they think non-Sherpa may get additional status if they are given chance to climb. (K. Tamang, Personal Communication, February, 15-2022)

Such narratives of non-Sherpa mountaineers also prove the Sherpas' monopoly and hegemony in the mountaineering sectors. The narratives reveal not only the nepotism but also blame the Sherpa as ethnocentric, always giving priority to their own ethnic status in tourism and mountaineering sectors in Nepal. In this sense, tourism and mountaineering sectors also prevail as other sectors of Nepal with the influence of *afno manchhe* or *natako manche*, i.e., nepotism. Hence, one can see the dichotomy between Sherpa and non-Sherpa in the fields of tourism and mountaineering sectors in Nepal.

Gradually, such duality is changing in the mountaineering sector because of two reasons. The first, records of non-Sherpa mountaineers such as Nims dai (Nirmal Purja Magar) and others and world-wide fame of such success. The second is the out migration of Sherpa from the Khumbu region and abandoning the mountaineering by the new Sherpa generation. The world-wide fame of the successful story has made trust over the non-Sherpa mountain guides in one hand and in another hand number of non-Sherpa's mountaineers are exceeding day by day.

Asking the caste or ethnic status by the tourists is common and natural because most of the tourists understand Sherpa as an idol of mountaineering. The queries regarding caste and ethnic status by the tourists have been accepted by most (88.5%) of the informants. It shows

the Sherpa's demands and domination in the mountaineering sector. However, the trend of giving chance to skilled and experiences one rather than to particular caste/ ethnic category should be taken positively. About 19 percent Sherpa and 48 percent non-Sherpa intends to provide jobs to the skilled and experienced mountain guides. Similarly, 34.8 per cent Sherpa and 73.4 per cent non-Sherpa mountaineers intended to work with the mixed community rather than preferring to the particular caste or ethnic background. This is really good because mountaineering requires skills and experiences rather than any particular type of caste and ethnic category of the people. It is also equally true that the demand of Sherpa by the tourists is also not because of their intimacy towards an ethnic group Sherpa but because of their hard work, dedication, honesty and cooperation with the tourists.

Conclusion

Tourism and mountaineering has a short history in Nepal. This sector has gradually begun after the end of Ranarchy and commencement of democracy in 1950 A.D. in Nepal. Interestingly, Sherpa, tourism and mountaineering have remained as synonyms in Nepal. Tourism, mountaineering and the Sherpa are supplementary to each other. The lives of Sherpa without tourism are half empty and mountaineering without Sherpa is completely empty in Nepal. It shows the significance of Sherpa in the tourism and mountaineering sectors in Nepal.

Now, the numbers of non-Sherpa's mountain guides are also taking parts in mountain expeditions. Talking about Mt. Everest from the year 1953-2019 A.D. 93 percent summits were made by Sherpa and 7 percent by non-Sherpa. Similarly, 94 percent summits on Mt. Annapurna I (1949-2019) and 87.33 percent summits on Mt. Amadablam in 2019 A.D. were made by Sherpa. It means 7 percent summits on Mt. Everest, 6 percent on Mt. Annapurna I and 12.63 percent on Amadablam were made by non-Sherpa mountaineers. The data reveal the non-Sherpa's participation in the mountaineering sector.

The increased number of non-Sherpa mountaineers not only increased the competition among the mountain guides but also challenge the Sherpa's legacy, monopoly and hegemony on the mountains. However, the willingness to provide job to their own caste and ethnic category, to feel easy to work with the people from same caste and ethnic category, acceptance of the prevalence of effects of caste and ethnic status in mountaineering are not only the bases or basic requirements for the successful mountain summits but it is also Sherpa and non-Sherpa dichotomy and politics in tourism and mountaineering. Hence, tourism and mountaineering should not be broadly analyzed through caste and interethnic interface but it should be interpreted with a dichotomous interrelationship between Sherpa and non-Sherpa rather than with any form of particular caste or ethnic category.

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Social Capital Contributions to Resilience in an Entrepreneurial Ecosystem in Nepal

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Abstract

Tourism is an important sector for many people in Nepal. There have been a number of damaging shocks in the last decade, including the 2015 earthquake and the COVID-19 pandemic, that have stopped the industry in its tracks. The effects of slow onset climate change are also impacting the industry and are forecast to get worse. An entrepreneurial ecosystem in Nepal has been established to foster resilience among participating businesses. This research addresses whether social capital contributes to the resilience of tourism start-ups in Nepal and whether an entrepreneurial ecosystem fosters that social capital. Further, it asks whether renewable energy and energy efficient practices have impacted resilience. And, finally, whether there is evidence of transformative change within the businesses studied. Results suggest that relationships generated through enduring historical shocks in the tourism economy in Nepal have fostered social capital, and that the entrepreneurial ecosystem has itself cultivated elements of social capital and resilience in the participating businesses. While firm conclusions could not be drawn as to whether transformative change has occurred in the businesses, the foundation for realising transformational opportunities has been established. This study suggests that resilience can be reframed from its historically ecological confines to be a more fluid and adaptable concept of human agency affected socio-ecological systems and may eventually allow, and be a driver of, transformational change in businesses participating in an entrepreneurial ecosystem.

Keywords: social capital, tourism, resilience, entrepreneurial ecosystems

Introduction

Nepal is highly likely to suffer from the effects of climate shocks and stressors (Adhikari et al., 2018). Nepal is a lower middle-income country with a population of 29.1 million (NBS, 2023), of which, 17.5% are described as multidimensionally poor (UNDP & OPHI, 2022). The need for adaptation, resilience and transformative practices to climate change effects are very real and of great importance. The aim of this research was to investigate if social capital (SC) affects resilience of tourism start-up businesses within an entrepreneurial ecosystem (“the ecosystem”) in Nepal. Further, whether there is evidence of transformative practices within the tourism start-up businesses as a result of participation in the ecosystem. While some literature exists as to the resilience of Nepali tourism in relation to shocks from the Civil War 1996-2006 (Baral, 2014) and the earthquake of 2015 (Anup, 2017; van Strien, 2018; Min et al., 2020) there is no literature addressing the resilience of tourism start-up’s to climate change or resilience to a global pandemic in Nepal. Individual SC benefits on tourism businesses have previously been addressed (Zhao et al., 2011), but no research exists on the effect of SC within an entrepreneurial ecosystem of tourism start-ups in Nepal.

This research asks:

- Question 1: What aspects of social capital have contributed to the resilience of tourism businesses in Nepal? (RQ1)
- Question 2: Has an entrepreneurial ecosystem fostered resilience through social capital for tourism start-ups in Nepal? (RQ2)
- Question 3: How do renewable energy and energy efficient processes affect resilience of tourism start-ups in Nepal? (RQ3)
- Question 4: Is there evidence of transformation in tourism start-ups in Nepal? (RQ4).

This paper is divided into five further sections, literature review, methodology, results, discussion and conclusions.

Literature review

Social capital is “the aggregate of the actual or potential resources which are linked to a possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (Kerr, 2018). Simply put, the strength and diversity of relationships between entities. SC has been categorised into three divisions: bonding SC – bonds between members of a defined community; bridging SC – connecting members of different communities; and linking SC – a connection between individuals and communities outside of explicit boundaries (Smith & Frankenger, 2018). However, SC has previously been difficult to attribute to a single source or community, often taking multiple forms and pathways (Smith & Frankenger, 2018). Social capital is a core tenet of sociological research, definitions are numerous, and a unifying framework is lacking. Yet “ambiguity is not a hindrance in so complex a notion; it is instead a help, for it enables us to avoid a protracted discussion on what social capital means.” (Dasgupta, 2021). To date, the contribution of SC and human agency to the field of resilience has been underestimated (Chen et al., 2020) or received inadequate attention (Tanner et al., 2015). Therefore, SC is important in the context of resilience theory.

Resilience theory describes a system’s ability to adjust to shocks and stressors (Holling, 1973; Folke, 2006; Walker et al., 2006; Lockie, 2016). Holling (1973) introduced resilience as an ecological concept explaining the potential for natural systems to return to an equilibrium point after some change to a system. This theory complements complex systems thinking as it allows a holistic study of not only the processes but the relationships between and within systems. This gives rise to the idea that both human social systems and ecological systems are connected (Walker et al., 2004; 2006) and leads to the idea of the socio ecological system (SES).

One example of a SES is tourism (Becken, 2013). Tourism has been noted as containing elements of recreation, leisure and hospitality, while largely defined by spatial and temporal variables (Robinson, 2012). Tourism also ties different economic, social and environmental factors together (ibid). As such, tourism represents an opportunity to study relationships between natural and human systems (Becken, 2013).

Tourism also has links to resilience theory (Cheer & Lew, 2017; Espiner et al., 2017; Ibanescu et al., 2020; Ruiz-Ballesteros & del Campo Tejedor, 2020) and research has demonstrated strong links between community based tourism and resilience (Ruiz-Ballesteros, 2011; Lew,

2014; Chen et al., 2020; Musavengane & Kloppers, 2020). Variables that may affect the resilience in tourism destinations are landscape, regime, niche and actors (Amore et al., 2018). Tourism is also a “key plank for economic development” (Cheer & Lew, 2017). Given the scale and impact of climate shocks and stressors, the ability to adapt and increase community resilience in the face of climate change is necessary within tourism sectors in Nepal and other developing countries.

Resilience theory has been applied with an economic lens to SESs (Holling, 1996; Spilling, 1996; Farley & Voinov, 2016; Roundy et al., 2017; Dentoni et al., 2021). Farley and Voinov (2016) further propose the idea that economics is “embedded in society, which is in turn embedded in the ecological, geophysical life-support system of planet Earth” (Farley & Voinov, 2016). This study therefore presents a confluence between ideas of SESs, resilience theory and economics which are all embedded in tourism.

The tourism businesses in this study exist in an entrepreneurial ecosystem. An entrepreneurial ecosystem represents a system that includes clients, investors, entrepreneurs, customers and support organizations with common intentions (Spilling, 1996; Roundy et al., 2017). Entrepreneurial responses are an “effective catalyst for business resilience in times of crisis” (Dahles & Susilowati, 2015). Given the extent of recent climate shocks and stressors in Nepal, there is an opportunity in the Nepal case to study the resilience of this entrepreneurial ecosystem of tourism businesses. This research has implications beyond Nepal as tourism is inextricably linked to climate change yet is key to economic development in much of the global South (Tanner & Horn-Phathanothai, 2014).

The concepts of resilience, SESs, and social and economic structure are encompassed by the idea of social resilience or adaptation. Adger’s definition of resilience is “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political, and environmental change” (Adger, 2000). Studies indicate that social adaptation and SC contribute to the resilience of the tourism SESs (Ruiz-Ballesteros, 2011; Becken, 2013; Espiner & Becken, 2014; Espiner et al., 2017; Musavengane & Kloppers, 2020; Ruiz-Ballesteros & del Campo Tejedor, 2020; Uddin et al., 2021). Tourism as an SES can have both negative and positive impacts on SC and so must try to maximise positive impacts and reduce negative impacts to support community wellbeing (Moscardo et al., 2017). However, some differences between sustainability and transformation are yet to be reconciled.

Parris and Kates (2003) define sustainability as “a social choice about what to develop, what to sustain, and for how long” (Parris & Kates, 2003). Transition to more sustainable pathways is an urgent requirement to address complex interconnectedness of ecology, economics and human agency at all scales (Luederitz et al., 2017). This process of transformation draws upon the concepts of transformative and incremental adaptation. Here transformation is a process that seeks to address the root causes of an issue, including socio-economic structures that amplify inequity (Fedele et al., 2019; Kates et al., 2012). Feola et al. (2021) argue that business as usual or unlimited growth approaches are going to overshoot a proposed 1.5-degree limit to global warming, in their eyes, transformation is required. Avelino and Grin (2017) detail not only the deconstruction of unsustainable practices, but also the opportunity to pursue reconstruction of more sustainable practices (Avelino & Grin, 2017). Feola et al. (2021) and Nightingale et al. (2020) are somewhat critical of this approach as they outline that some “theorizations of sustainability transformation are grounded in constructionist approaches while obscuring the process of deliberate deconstruction of

unsustainable processes” (Feola et al., 2021). To simplify, does society focus too much on new sustainable solutions as opposed to dissolving unsustainable practices?

From a tourism perspective, recent studies suggest that the COVID-19 pandemic could provide opportunity for transformative change in the tourism industry (Hall et al., 2020) or even be seen as an “involuntary degrowth experiment” (Schaltegger, 2021). It is important to note that despite Hall et al. (2020) questioning whether change needs to come from inside or outside the tourism industry, foundational research on transformational change suggests that “change at smaller scales enables resilience at larger scales” (Folke et al., 2010). So, smaller scale ecotourism operations can foster sustainable development (Jones, 2005; Moscardo et al., 2017) and it might be possible then that smaller scale transformational change in the tourism industry may enable resilience at larger scales.

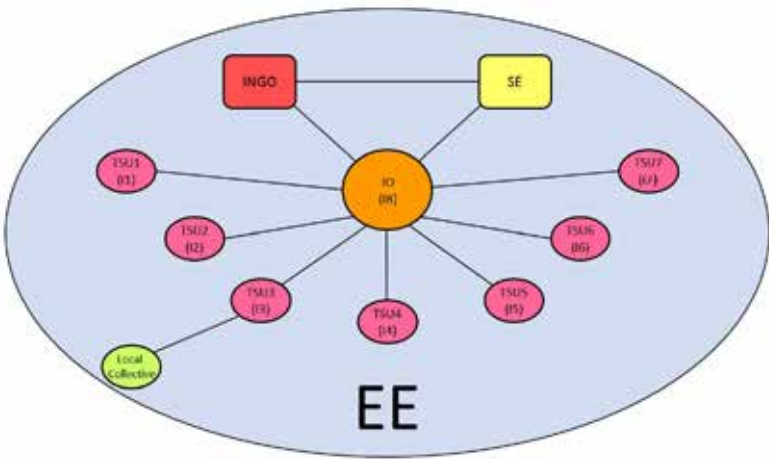
Method

The research questions (RQ) were developed to conduct inductive qualitative research (Bryman, 2016) through semi structured interviews. Data was collected by conducting semi-structured interviews containing sixteen primer questions. Semi-structured interviews allow for in-depth insight into participants perspectives (Al Balushi, 2016). While this style of research can be difficult to replicate (Bryman, 2016) semi structured interviews are regarded as social situations befitting of social data gathering (Rapley, 2001). COVID-19 themed questions allowed interviewees to compartmentalise their answers to the interview questions in terms of effects related to, and unrelated to COVID-19 so that data could be more easily refined during analysis. Research data was gathered via interviews with start-up representatives that took place either face to face, or over the phone during the period between March 2022 through to August 2022. Seven start-ups from eight in the ecosystem agreed to be involved in purposive case study analysis, a method that is considered as highly iterative and aligned with source data (Eisenhardt, 1989).

As the ecosystem in this research was a pilot programme, the interview participants and location data

Figure 1

Organogram of the ecosystem studied



Note: EE = Entrepreneurial Ecosystem; INGO = International Non-Governmental Organisation; IO = Implementing Organisation; SE = Social Enterprise; TSU = Tourism Start Up (Interviewee number).

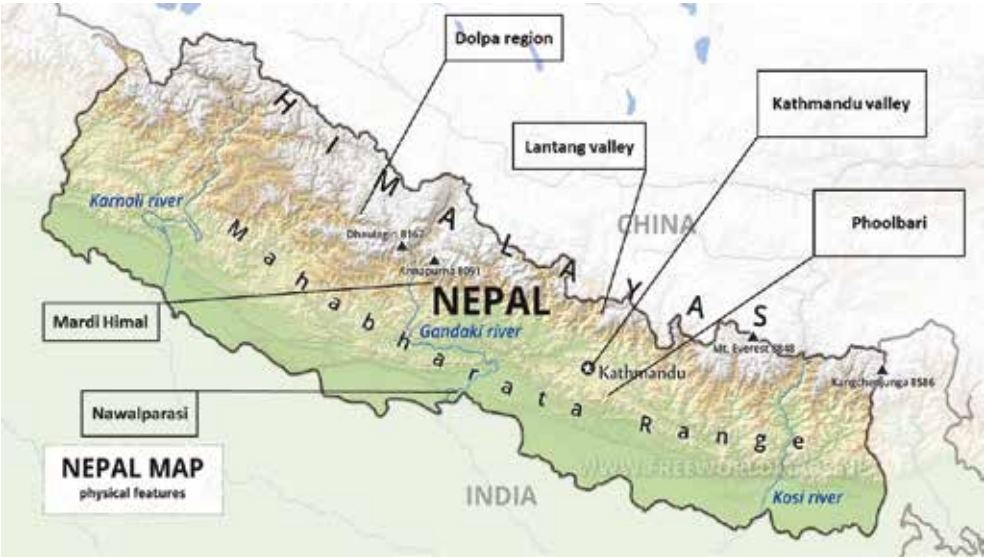
(Figure 2) were anonymised and assigned identifiers (Table 1) so that any contributions to this research would not impact potential participation in ongoing or future research. It should be noted that while the businesses were start-ups, many of the

owner/operators had previous experience of running tourism businesses. Each of the start-ups was considered as a separate case study, but all operated under the umbrella of an entrepreneurial ecosystem in Nepal. The start-ups were backed by an international non-governmental organisation and a social enterprise. The ecosystem was administered by the implementing organisation (IO). Seven of these eight start-ups made themselves available for this research. Figure 1 shows the relationships between the start-ups researched and the ecosystem.

The start-ups involved in the study were all owner operated except for one, a cooperative (I3). The cooperative managed a local tourism collective. The implementing organisation was backed by a for profit social enterprise and an international non-governmental organisation specialising as a learning and knowledge sharing centre. The ecosystem facilitated the transfer of hardware (tangible components), software (knowledge associated with use of hardware) and orgware (organisational frameworks involved in implementation) (Boldt et al., 2012) to the start-ups with a 2 Lakh (200,000 Nepali rupees) seed fund for energy efficient and renewable energy practices and masterclasses on business and financial planning, sustainability, and energy efficient and renewable energy.

Figure 2

Map of TSU locations.



Source: www.FreeWorldMaps.net (2022)

Table 1

Interviewee Codes and Attributes of Participants

Interview Code	Role	Business Type	Location	Gender
11	Owner Operator	Accommodation	Outside KTM Valley	Male
12	Owner Operator	Agro-Tourism	Outside KTM Valley	Male
13	Administrative Officer	Cooperative	Outside KTM Valley	Male

14	Owner Operator	Trekking	Outside KTM Valley	Male
15	Owner Operator	Accommodation	Outside KTM Valley	Male
16	Owner Operator	Accommodation	Outside KTM Valley	Male
17	Owner Operator	Agro-Tourism	Outside KTM Valley	Male
18	Director	Programme Implementor	Inside KTM Valley	Female

The start-ups' businesses dealt with different types of products and clients. In this study, it was found that accommodation businesses primarily deal with overnight lodgings and sometimes providing food for guests, agro-tourism businesses provide a combination of accommodation, restaurant hospitality and agricultural experiences, and trekking businesses provide walking tours (often multi-day) with accommodation in fixed and non-fixed locations with food. A final interview was conducted with the director of the implementing organisation (18).

Data from the semi-structured interviews was coded and retrieved through NVivo12TM (Qualitative Data Analysis Software | NVivo, 2021). This allowed for a thematic analysis of the research areas based on the research questions. The themes used for analysis of interviews were relationships, SC, social and business resilience, energy efficient and renewable energy practices, adaptation, and sustainability. Interviews were coded by theme in NVivo 12TM. NVivo 12TM coding matrices were used to ascertain how each theme varied through the interviews and through the entirety of the data set. Matrices also correlated where two themes (or attitudes) overlapped. Each start-up was given two extra parameters to be coded by: business type and location. The four business types were accommodation, agro-tourism, cooperative and trekking. Location was divided into either inside the Kathmandu valley, or outside the Kathmandu valley. This was to gauge whether geographical separation from the implementing organisation, Kathmandu, and its associated infrastructure affected the responses to any of the themes in the research questions.

Some interviews were conducted over the phone with interviewees in remote locations. As such, two interviews were conducted over longer timeframes (90 minutes) due to the disconnection and reconnection of phone lines during interviews. In line with Nepal's COVID-19 regulations at the time, face-to-face interviews were conducted with face masks/shields, hand gel and outdoor meetings as required. All interviews were conducted in the English language.

Results

(RQ1) What aspects of social capital have contributed to the resilience of tourism businesses in Nepal?

Social capital outside of the entrepreneurial ecosystem

The SC most often referred to in the results were forms of bonding SC between the start-ups and their local communities. This was clear in the frequency that the words (and stems of) village, community and local that appeared, eight, twelve and sixteen times, respectively, in the 50 total references coded as SC and relationships - not related to the ecosystem. When referring to items coded relationships - not relating to the ecosystem, location was an important variable with 13 mentions by start-ups inside the Kathmandu valley, but 30 mentions by start-ups outside of the valley. SC references also featured in numerous themes

of sustainability – these were sustainability of: waste management (I1, I5, I6); agriculture (I2, I7); and gender equity and economies (I3). This sentiment was encapsulated best as, “sustainability is most important thing, because if we can’t sustain in your business then we can do nothing [sic]” (I2). For several respondents (I1, I2, I5, I6, I7) the SC and relationships generated during previous shocks, such as the 2015 earthquake, presented opportunities to start their business (I7), or to galvanise communities in the light of ongoing shocks. Of the 2015 earthquake one participant said, “[in] that period one of the best thing that we were able to... is we formed our own community and we also formed the committee [sic]” (I6). Interviewees I1, I2, I5, and I7 expressed notions of being market leaders in sustainability practices, looking not only to spread their ideas within their local communities, but further afield, as one explains, “we do not want to limit it only in our farm, we want to promote it to the third world countries, the underdeveloped countries and still developing sort of countries” (I7).

Resilience through diversification

The theme of diversification featured in all but one interview. Diversification appeared often in interviewees’ responses as having a positive effect on bridging SC, an example of this was the “opportunities to focus on manufacturing as well” (I5). Bonding SC also featured, often because of agricultural practices (which are obviously a feature of agro-tourism businesses) but also occurring in other businesses (I3, I5, I6). A clear example of the benefits of this was when an interviewee said, “if I was sticking only in tourism business I would have gone back to my village” (I2). Diversification was particularly evident when the COVID-19 pandemic struck, causing the start-ups to rapidly pivot into other livelihoods, such as agriculture, “In two years’ gap where we have no business now, so we have to be completely dependent on the agriculture [sic]” (I6). Overall, however, diversification was a theme largely mentioned by accommodation and agro-tourism businesses (40 references) and only twice by the cooperative out of the 42 total references. COVID-19 also meant start-ups exploring other sources of income in the form of agriculture, shifting business focus to domestic clients, and the chance to join the entrepreneurial ecosystem in this study. Start-ups that already dealt partly in agriculture found dealing with the lockdowns in Nepal slightly easier as they did not have to look far to feed their families, for example “I didn’t have much difficulties during the COVID because I had my own productions to eat, to feed my childrens [sic]” (I2). For some start-ups that did not already participate in agriculture, it was a more difficult prospect, “we villages are completely dependent on the tourism” (I6). Another pivot due to COVID-19 that was common across start-ups was from international clients to exclusively domestic clients. COVID-19 meant a complete ban for both domestic and non-domestic tourists during parts of 2020 and 2021. Subsequent sporadic reopening of domestic travel routes, long before international routes reopened, represented a lesser income source for most start-ups and a complete stop for one, I4. Changing which customers they catered for varied in a number of ways, from changing menus (I2, I5, I7), changing product structure (I1), and changing the amount they charged (I1, I2, I5, I6, I7).

Climate change

Under climate change several sub-themes were identified by interviewees: changes in weather patterns, seasons and monsoon; drought or water shortages; flooding; warming; impacts on livelihoods. The number of these sub themes represent a wide range of climate change impacts perceived by the start-ups. Overall, there was a largely negative attitude about the

perceived impacts of climate change, totalling 87.5% of the climate change references.

Climate change themes showed little direct correlation with themes of SC, but indirectly, evidence of relationships changing because of climate change became clearer. Businesses that did not have agriculture as a part of their model but have had to reconnect with agricultural practices because of shocks or stressors (COVID-19, 2015 Earthquake) found their relational SC with their local agricultural community affected, one interviewee commented, “when there is tourism the lodge owners will be completely busy at the work of the lodge. ... when they have the free times for the lodge owners they can mix up working with each others [sic]” (I6). Where agro-tourism businesses are concerned, climate change has a direct impact on their growing seasons, “sometimes it is very drought, sometimes it is a heavy rainfall, and you do not have, in the summer season, you do not have sun... this has all been affecting agricultural patterns [sic]” (I5). But no evidence was collected to show that these changes to growing seasons influenced their SC. One business had to change their trekking routes because of water sources drying up, thus decreasing relational SC for one community, but conversely, potentially increasing it for another, “the water resources are drying up... so if you don’t have water there then you need to walk to another camp” (I4).

(RQ2) Has an entrepreneurial ecosystem fostered resilience through social capital for tourism start-ups in Nepal? (RQ2)

Social capital within the entrepreneurial ecosystem

Relationships were coded into three directional categories: from the start-up to the ecosystem; between start-ups; and from the ecosystem to the start-ups. Of the three types of directional relationships coded during the analysis, two stood out. Firstly, between start-ups within the ecosystem (16 references). These relationships were idiosyncratic, but one start-up indicated a mutual level of sharing in saying “in most sessions we did share things that we did do and didn’t do, and things that went well and didn’t go well” (I1). Secondly, from the ecosystem to the start-ups which numbered 31 references and was typified by one interviewee saying, “they gave us very nice tips about the sustainability and the management of the company and then many things that we need in our business” (I4). However, some participants (I2, I4, I7) felt that COVID-19 restrictions prevented better connections between start-ups in the ecosystem, one participant saying that, “because of the COVID and the restrictions, we were not able to visit the other business sites, so that would have been very beneficial” (I4).

In terms of attitude, positivity about the ecosystem to the start-ups was the highest referenced attitude among the ecosystem relationships (Table 3). Minimal, mixed, and negative feelings were present, but these attitudes often related back to COVID-19 restrictions, not the relationships themselves. In terms of location, the ecosystem was much more referenced by start-ups outside of the Kathmandu valley than those inside the Kathmandu valley (Table 4 and Figure 6). In terms of business type, accommodation provider had the most references (Table 5 and Figure 7).

Business and financial planning

The general attitude of the interviewees towards the business and financial planning was optimistic with 85% of coded responses being positive (Table 3 and Figure 5). All but one of the interviewees specifically mentioned business and financial planning as a positive influence on them. The one start-up that did not positively mention this, consequently raised issues of

time and geography that prevented them from fully participating in the sessions. In terms of affecting resilience, the masterclasses were well received, for example: “good and effective... and concise and concretised about how to implement and plan” (I4) or “we were very happy” (I2) indicate that, along with existing research, that business resilience can be improved with financial planning (Adekola & Clelland, 2020). As a variable, location was proportionally relative to the number of start-ups inside and outside the Kathmandu valley (Table 4 and Figure 6). In terms of the type of business, trekking and agro-tourism raised business and financial planning themes more than proportionately (Table 5 and Figure 7).

Table 2

Attitude towards entrepreneurial ecosystem references

References	Negative	Neutral	Mixed	Positive
EN and RE	1	1	4	9
EE	0	0	4	11
Business and Financial Planning	0	0	3	11
TSU to the EE	0	0	1	2
Inter-TSU in EE	0	2	3	5
EE to the TSU	2	0	2	14
Seed Fund	1	0	1	2

Note: EN and RE – Energy efficient and renewable energy practices; EE – Entrepreneurial Ecosystem; TSU – Tourism start-up

Figure 3

Number of entrepreneurial ecosystem responses versus attitude

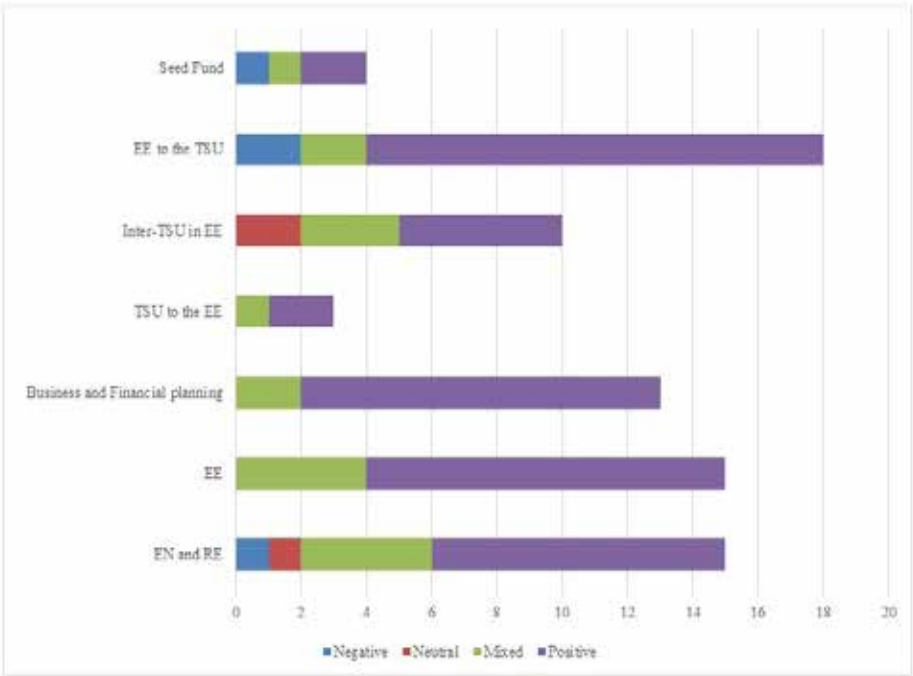


Table 3

Location of entrepreneurial ecosystem responses

Responses	Inside Kathmandu Valley	Outside of Kathmandu Valley
EE	6	25
Business and Financial Planning	4	12
EN and RE	12	22
TSU to the EE	1	6
Inter-TSU in EE	3	13
EE to the TSU	7	24
Seed Fund	4	6

Figure 4

Number of entrepreneurial ecosystem responses versus location

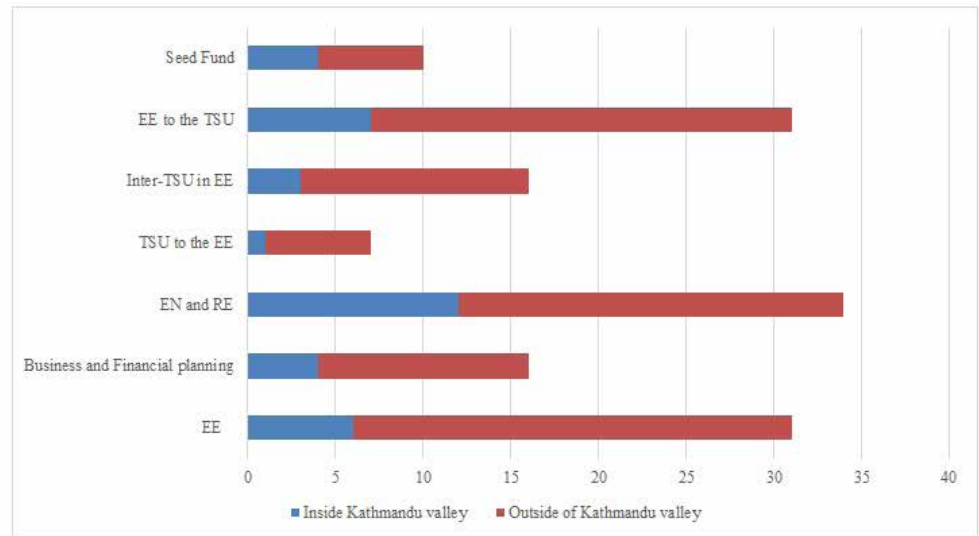
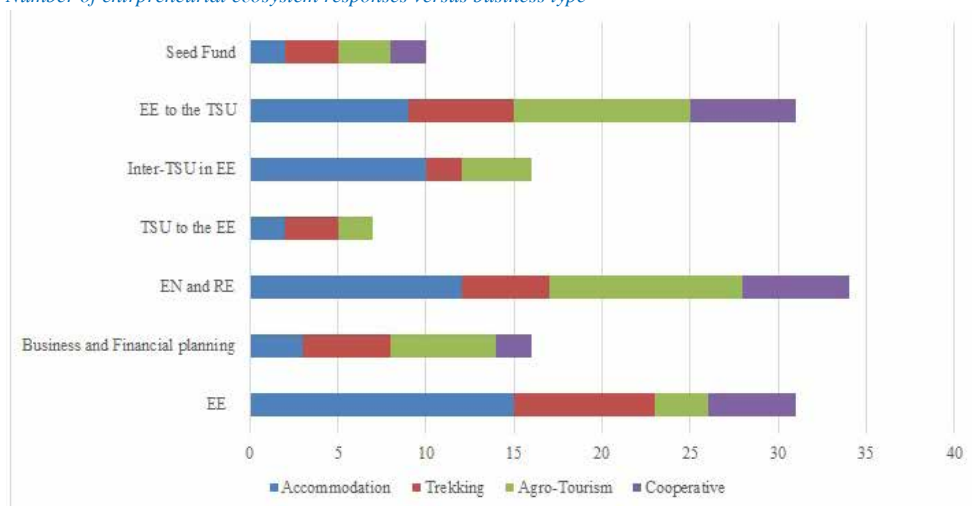


Table 4

Business type and entrepreneurial ecosystem responses

Responses	Accommodations	Trekking	Agro-Tourism	Cooperative
EE	15	8	3	5
Business and Financial Planning	3	5	6	2
EN and RE	12	5	11	6
TSU to the EE	2	3	2	0
Inter-TSU in EE	10	2	4	0
EE to the TSU	9	6	10	6
Seed Fund	2	3	3	2

Figure 5*Number of entrepreneurial ecosystem responses versus business type*

(RQ3) How do renewable energy and energy efficient processes affect resilience of tourism start-ups in Nepal?

Nine of fifteen of the total responses were positive in regard to energy efficient and renewable energy practices (Table 5 and Figure 7). The spending of the seed fund on energy efficient and renewable energy choices varied between start-ups, five out of seven opting for some form of solar energy solution (one yet to install), one for a biogas solution and one for a power audit and wiring solution. In terms of business type, all mentioned energy efficient and renewable energy practices, but proportionately less by accommodation providers and more proportionately by agro-tourism, trekking and cooperative start-ups (Table 5 and Figure 7). When comparing location of the businesses there are twelve references from the two inside the Kathmandu valley and 22 from the five outside the Kathmandu valley. (Table 4 and Figure 6). The start-ups had differing viewpoints on how energy efficient and renewable energy practices affected resilience. Some outside the Kathmandu valley (I3, I5, I6) sighted an ineffective national grid as an issue, but for many the reduction in costs from the energy efficient and renewable energy seed fund was key (I6, I4, I3, I2). One start-up framed their energy efficient and renewable energy application in terms of increasing their resilience against competing businesses, “if you walk another half an hour there is another lodge ...so they have the better lodges with the lighting systems” (I6). Customer experience was also mentioned by the same interviewee, “without the charging systems of the cell phones, the people can’t stay at the places” (I6). This theme was reiterated as well as adding a layer of sustainability and cost reduction, “before we were operating on battery... now we can operate all of them, so we can use the water filtration machine, which consumes less power” (I5). This reinforces the idea that reducing costs can increase the resilience of businesses (Dahles & Susilowati, 2015).

(RQ4) Is there evidence of transformation in tourism start-ups in Nepal?

Incremental adaptation effects on SC attitudes were largely positive, but mixed feelings were felt by two start-ups outside of the Kathmandu valley (I4 and I5) because of development of

Discussion

(RQ1) What aspects of social capital have contributed to the resilience of tourism businesses in Nepal?

Social capital outside of the entrepreneurial ecosystem

The SC most often referred to in the results were forms of bonding SC. Existing ties that start-ups have with local communities appear to be strengthened when short term shocks (such as COVID-19) hit, but also when longer term stressors such as climate change affect them. Overall, bonding SC (outside of the ecosystem) corresponded most often alongside themes of diversification, COVID-19 and sustainability. Given this, there is at very least, suggestive evidence between the strength of structural SC a start-up has with their community, and the resilience that they gain from these connections. Locations outside of the Kathmandu valley also exhibited stronger ties to their communities, suggesting that rural communities in Nepal may be more closely knit than urbanised ones. SC also exhibits partial ties with several other themes, representing the wide-ranging effects of human agency within an SES. As well as being devastating for several reasons, shocks and stressors also show signs of increasing SC and resilience for start-ups and individuals after they experience them.

Resilience through diversification

Diversification was a clear strategy when the COVID-19 pandemic struck, causing the start-ups to pivot rapidly into other livelihoods, such as agriculture, resulting in bonding SC between the start-ups and local pastoralists. However, while this strengthened this type of SC, the established relationships within the tourism industry appear to have suffered. Whether this outcome is an overall net gain or loss for SC is dependent on the perceptions of each individual business, and how quickly they can return to tourism or, in ecological resilience terms, how rapidly can the state of the system return to equilibrium. Although, what equilibrium point the start-ups may return to might be governed by the size of the shock. In respect to the positive aspects of COVID-19 it can be said that as a catalyst, the pandemic has driven bonding SC into linking SC, evident in the diversification detailed by most interviewees. Start-ups that did not already deal in part with agriculture, had to rely more on bridging SC to survive during the COVID-19 pandemic. However, in many rural Nepal settings, agriculture is a part of life (Adhikari et al., 2018). So, the pivot away from tourism towards agriculture was a relatively straightforward decision for some start-ups. However, relying more on agriculture meant that some start-ups were increasingly exposed to perceived changes in climate that affected crop patterns. Another change in orientation by the businesses commonly found in the study was to domestic clients. While this often represented difficult operational and financial decisions, it allowed most of the start-ups to continue existing through a period without international travellers and subsequently a large portion of income. The ecosystem aided in this transitional process and contributed to the resilience, primarily through business plans of the participating start-ups during COVID-19. In future this may make the TSUs more resilient in similar events that stem the flow of transnational tourism.

Climate change

The participants in this research are victim to both slow climate change stressors, such as snow melt and seasonal changes, as well as fast acting climate change impacts, such as

flooding and landslides. There is a wide intra-sector variability of perceived climate change effects in tourism. Indicating that the tourism industry could be the canary in the coal mine of climate change effects on start-ups and business in the future. This study shows that SC of start-ups does change with climate change effects. The businesses generally have been dealing with the effects of climate change prior to the inception of the ecosystem. But what the ecosystem has done is enable the start-ups to better take advantage of situations that change the way relationships are formed and galvanised during times of stress. While it was outside of the scope of the ecosystem to address individual effects of all climate impacts, the ecosystem was able to equip the businesses with the ability to deal with slow climate stressors through masterclasses and energy efficient and renewable energy practices in their businesses. In terms of increasing the resilience towards climate change stressors, there does appear to be suggestive links between the ecosystem and the hardware, software and orgware transferred with the perceived increased resilience to climate change effects of the participating businesses.

(RQ2) Has an entrepreneurial ecosystem fostered resilience through social capital for tourism start-ups in Nepal?

Social capital in the entrepreneurial ecosystem

Evidence of relationships formed in the ecosystem were clear. During the relative isolation of COVID-19 lockdowns, similar business types in this study appeared to gain more from similar businesses in the ecosystem, for example, accommodation providers benefiting from understanding and being connected with other accommodation operators. The effect being that SC bonds could be described as bonding within the ecosystem, but also bridging as these businesses may have not otherwise been connected, exhibiting the very nuanced nature of human agency and relationships. Relationships have exhibited the ability to improve resilience through connecting entrepreneurs via this ecosystem and perhaps laying the foundations for transformational change (Kates et al., 2012). What is not known is how much more benefit the start-ups would have gained from being able to meet in person. The connections made in the ecosystem have likely contributed in some way to the adaptive capacity of the businesses. Increasing the SC, adaptive capacity and resilience in this instance may prove to lead to transformational change at some point in the future, where previously resilience has been seen as a barrier to transformation (David Tàbara et al., 2019). SC effectively creating a support mechanism that builds adaptive capacity until such time as transformation has been achieved. The start-up's perceived resilience is likely increased because of participation in the ecosystem, but at most points it was difficult to delineate the separation in benefits between previous shocks and stressors and the effects of the ecosystem. This may indicate how difficult it is to understand the effects of human agency on resilience (Lockie, 2016).

The implementing organisation also hoped to bolster resilience and sustainability through establishing more efficient business models. The positive attitudes expressed towards business planning indicates that some start-ups were operations with some informal processes that benefitted from the masterclasses. Educating the start-ups through the ecosystem appears to have increased their adaptive capacity to shocks and stressors and increased their resilience. The effects of the business planning on start-ups that had more complex operations dealing in accommodation, agriculture and trekking also show to have benefited. This may indicate a proportional relationship between the degree of resilience a start-up could gain in an

entrepreneurial ecosystem with that of the complexity of the businesses model.

(RQ3) How do renewable energy and energy efficient processes affect resilience of tourism start-ups in Nepal?

Establishing energy efficient and renewable energy practices was a core feature of the ecosystem. The approach from the implementing organisation led to the start-ups to being able to tailor energy practices specifically to their differing needs. This personalisation worked well for one accommodation provider that already had solar installed, allowing them to invest in biogas facilities. The introduction of additional energy efficient and renewable energy practices meant that start-ups were less reliant on local infrastructure in most locations. However, in locations further away from Kathmandu, electricity supply seemed to be more problematic than those businesses within the Kathmandu valley, so increasing resilience against poor infrastructure may have spatial differences in Nepal. The energy efficient and renewable energy solutions increased adaptive capacity in varying ways, from lowering electricity costs and reliance on the national grid to making some businesses more competitive in crowded marketplaces.

(RQ4) Is there evidence of transformation in tourism start-ups in Nepal?

Several influences both from within and outside of the ecosystem that affect the ability of a start-up to adapt are present, these are shocks and stressors and the teachings and funding from the ecosystem. There does appear to be suggestive evidence linking SC and adaptation to agriculture within the tourism industry in Nepal. The strengthening of this link was likely catalysed by the COVID-19 pandemic, but it was difficult to define whether there was a net benefit to the start-ups. This is because the benefits of growing linking SC outside of existing networks may not be able to be realised until some point in the future. Most of these influences class as incremental adaptation, but what about transformative adaptation?

One issue on deciding whether a process is transformative or not tends to be an issue of either temporal or geographical scale – scales that this ecosystem and research is not currently involved in. However, since transformative goals applied to programmes anticipatorily can conflict with the notions of risk costs and benefits (Kates et al., 2012), this is not surprising. The often-protracted spatial scales that transformation can work at (ibid), as well as considering that a collective group of incremental adaptations can become transformational (ibid), might yet mean this ecosystem has some transformative aspects to it. In order then for success of the ecosystem to be defined by transformation, further studies on the ecosystem would need to be carried out.

Adaptation practices can be considered as creating sustainable solutions (constructionist) or stopping unsustainable practices (deconstructionist). Constructionist approaches have historically underpinned sustainability in SESs (Feola, Koretskaya & Moore, 2021). In the ecosystem several constructivist approaches were employed. Expert seminars along with renewable energy and energy efficient practices were seen to help the start-ups become more sustainable through introduction of new practices. What is less clear though is whether the information led to the deconstruction of unsustainable practices. One participant outlined how they had completed an energy audit and rewiring project, which could be potentially defined as reconstruction (Avelino & Grin, 2017). If there has been no deconstruction of unsustainable practices then this backs up studies suggesting that more effort needs to be applied to removing unsustainable practices in order to achieve transformation (Feola et al.,

2021). Importantly, the ecosystem provided a safe space for start-up development and a framework for change while not defining an outcome, a tenet to transformational change (Ajibade & Adams, 2019).

Entrepreneurial ecosystem boundaries and limitations

At the time of the COVID-19 restrictions in Nepal, the implementing organisation could not arrange meetings in person between the participating start-ups. This issue was raised by three of the businesses as something unavoidable, yet ultimately undesirable. This was also a geographical issue as well. As per Figure 2, the businesses in the ecosystem were spaced all over the central regions of Nepal so even when travel was possible, meeting up was not always logistically straightforward. More face-to-face connections may have improved the SC in the ecosystem. The ecosystem also had expert advisors come in to run seminars. One such advisor was unable to run their class in the Nepali language and therefore ran the seminar in English. This was questioned by several participants as to why a Nepali speaking expert could not have been sourced.

Interviews with the supporting social enterprise and international non-governmental organisation entities were not able to be conducted. This might have provided additional context and insight into the reasoning for initiating the ecosystem as well as its potential continuation.

Conclusion

RQ1 findings were that SC bonds that were established outside of the ecosystem, within local communities, likely contributed to the resilience of start-ups in the study. Existing relationships developed by participants throughout their professional careers have meant stronger SC bonds within the tourism industry. The frequency that shocks, such as COVID-19 or the 2015 earthquake, have had on individuals in Nepal over the last decade have meant that participants have relied on these relationships (professional and personal) to survive. Suffering through these shocks may have increased resilience of these businesses – further studies might look to compare similar start-ups to gauge differences in resilience gained from short term shocks.

Diversification experience also plays a key role in resilience building of start-ups during these shocks – it allows them to provide for their families, while placing their business income on hold until tourists return. SC appears to help the affected start-ups pivot and reach out to their support networks, regardless of the shock or stress. Ultimately it appears that increases in resilience outside of the ecosystem have tended to stay within the bounds of traditional ecological resilience, in that they allow the start-ups to return to a point of equilibrium after a shock has occurred.

In relation to RQ2, findings indicate that the ecosystem appears to have been able to foster linking and bridging SC that increases in resilience in several ways. Firstly, through software in the form of masterclasses, allowing the start-ups to connect with experts in business and financial planning, energy efficient and renewable energy practices, and sustainability. Established relationships with experts are also likely to continue beyond the scope of the ecosystem. The orgware delivered by the implementing organisation contributed to linking SC in establishing the relationships between start-ups and the ecosystem during the programme. This finding builds on Dahles and Susliowati's (2015) research, that

entrepreneurial responses are not only catalysts but maintainers of resilience and grow resilience in the tourism industry.

The findings for RQ3 were that resilience is likely increased through introduction of energy efficient and renewable energy hardware and software via the seed fund. The Start-ups found that less reliance on the public infrastructure in Nepal was a positive factor, both for the supply in electricity and the lowering of costs associated with buying electricity. Less reliance on the national grid also meant that start-ups were hopeful about indirect benefits such as improved customer experience from greater access to consistent electricity.

In terms of RQ4, there is little to no evidence that the ecosystem has achieved transformation in the participating businesses, but this is not to say that they are not already on the path to transformation. This is not surprising given the larger scales involved in achieving transformation, even though the foundation for realising transformational opportunities has been established by the implementing organisation in this ecosystem.

The entrepreneurial ecosystem is a humancentric approach to building resilience through relationships, ideation, incubation, and technology transfer. It is important then to characterise the social capital effects rather than just tally them (Levine, 2014) while applying this same characterisation of resilience of the businesses within the ecosystem. Where resilience theory may have previously described a system that might become stuck at a certain point an unable to go through transformative change, this study indicates that SC may elasticize the idea of resilience. This research details how tourism start-ups can not only increase resilience through participation in an entrepreneurial ecosystem, but increasing their SC through the ecosystem also makes the start-ups more able to adapt with change and survive in the longer term. It is possible then that the ecosystem has nurtured businesses that over time, may come to be viewed as adapting in a transformational way. This leans to suggestive evidence of a link between resilience, social capital and transformation.

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Conflict of interest

The author declares no conflicts of interest.

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Stakeholder Synergies for Enhancing Community-based Tourism Development

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Abstract

The rise of community-based tourism has ushered in a new era of home-staying. The paper intends to demonstrate a viable model of synergistic efforts of local community-led tourism, as well as to analyze its functions in culturally significant historic sites. The necessary data were collected in the touristic environment of the historical Panauti area. Open-ended questionnaires with homestay owners and people's representative respondents were employed for the study. This essay focuses on socio-historical perspectives, settings and conditions of modernization, and the success of homestays through collaborative function. The descriptive model was employed for the analysis. Collective features of homestay are recognized as fostering factors for intimate relationship among local people, and local government is also thought to produce sustainable resource use, social relationships, cooperation, and empowerment.

Keywords: community-based tourism, homestay, social relation, stakeholders, collective relationships, historical Panauti

Introduction

Homestay is another type of community-based tourism that is done in collaboration with a community and is legally supported by the local government. This represents an opportunity for socio-economic development in a sustainable way, helping local people to emerge from lower living conditions (Usmonova et al., 2022), which ensures an enriched quality of life and the quality of the environment. People in the tourism sector have a connection with the local government, particularly homestay tourism, which is connected with the government and people's representatives at the grassroots level. The role of government and nongovernment organizations (including philanthropic organizations) is to create happy, healthy, and successful social phenomena. Every social practice is subject to verification and falsification; this entire text is based on the descriptive phenomenon of homestays based on the historical location of Panauti.

Every stakeholder in the society bears equal responsibility for balancing progress and quality of life. Tourism has an important part in the local community, where all stakeholders play an equal role in tourism management. Host communities have seen a positive impact on intercultural interaction (culture learning and exchange), business transactions, entrepreneurial development (skill building) and economic empowerment to eradicate poverty in the host communities (Geoffrey et al., 2020). Nepal's unique landscape and aesthetic qualities, its socio-cultural richness possess one of the most valuable tangible and cultural heritage values in the world (Kaini et al., 2022). Synergistic efforts can control social dysfunction in society

by fostering effective practices among the many agencies that exist. A collaborative partnership between different organs in homestay is a unique design as their features of operation have received a large number of tourists (Ma et al., 2022).

Figure 1

Panauti's main attraction, 12 years' Makar Mela in Tribenighat



Note: Sahadev Gautam

The aim of collaborative and essential duties is discovered after researching various stakeholder participations. The research, discourse, and analysis in tourism are about what is done, and what should be done in the interest of tourism (Gautam et al., 2023). The primary study and collected data presented here to form a final conclusion is to assess synergic efforts in community-based tourism-homestay. This article focuses on stakeholder participation and makes conclusion of the study.

The research is based on social phenomena. Homestay is used as a research domain in communities where community-based tourism is practiced. In a narrow definition, homestay tourism is local tourism run in a local context, although it covers a larger area. From the critical standpoint, analysis of stakeholder synergy is identifying key users and managers in a homestay program, assessing their interest in the homestay, and the extent to which the interest can affect the successful program in local touristic activities (Yuliani et al. 2019). Local culture, local governance, national, and worldwide visitor attractions are all included. As per the context various research methods are accepts to study social happening. A focus on what Lawal (2019) has called the 'social science research is a method to uncover social happenings in human societies' as a way to understand how different stakeholders are functioning within the same framework. Collecting data and doing research in social happening is also the process to 'build social relationships with the community' (Rai, 2022). Due to its ethnographic nature, the entire field-work for the research is based on personal communication between January 2022 and August 2022 to collect primary data.

The first author collected the data and information under the MPhil research project (Gautam, 2022). Field observation was one of the principal methods of collecting primary data (Khattri & Pandey, 2023). Open-ended questionnaires with homestay owners, local history narrators, historians, and people's representative respondents were employed for the study. The selection of the study area was based on 33 homestays. The semi-structured checklist was developed to collect primary data through Key Informant Interviews (KII). In-depth interviews with 6 people's representatives included the current mayor and deputy mayor, the

ward chairman from 3 wards, along with the former mayor. The researchers conducted interviews with the presidents of two homestays and 1 vice president, 1 historian, and 2 local history narrators' Samudayek Homestay, and 1 historian. Panauti, a sacred and famous historical place, is taken for the research site. Based on 7 months of participatory work conducted between January 2022 and August 2022 in Panauti, one of the heritage hubs of Nepal, is the core point of the study. Panauti Community Homestay is a wholly women-led homestay that demonstrates women's potential, while Namaste Samudayek Homestay is used as a research domain. People's representatives and local people are used as respondents through an analysis of the perception of key stakeholders (Adenike & Jim, 2022). For the analysis, descriptive model is used.

Figure 2

Panauti Community Homestay



Note: Panauti Community Homestay has its own community hall to welcome guests during field work. Namaste Samudayik Homestay's community hall is currently under construction. Namaste Samudayik Homestay welcomes and manages guests from Sangita Shrestha's home on a temporary basis.

A reflection of historian

The people's representatives are 'playing a fundamentally serving function' (Thamas et al., 2021). People's representatives are public agents who help to revitalize democracy. These representatives support the locals in terms of suggesting and fostering ideas and information to carry out small-scale entrepreneurial activities for their economic sustainability. In Panauti too such supports are available to run home stays.

There are a large number of tourists staying in community-based homestays in Nepal (Dahal, KC, & Sapkota, 2020) homestays in Panauti is not an exception. Now, to manage tourists in the destinations from local people to government and then international agencies are equally responsible.

Bhim Neupane, former mayor, reflecting from his tenure, tried to explain his efforts to initiate to get Panauti recognized from historical perspectives.

A major boost to religious tourism is the process of listing Panauti as a World Heritage Site. The appeal file is kept pending in the cabinet. The overall development of Panauti is only possible through agriculture and tourism. (B. Neupane, Personal Communication, Feb, 2022)

During his term, he oversaw tourism development in Panauti, with aid ranging from three lakh to ten lakh accessible for the upkeep of old properties in Panauti. Panauti's identity can be found in such an antique edifice. Managed homestays are inexpensive, sanitary, and environmentally beneficial. Homestays foster a peaceful relationship between citizens of the country and those from other countries. Panauti has its unique meaning and practices in terms of culture, architecture, food sovereignty, and guest respect. The traditional identity attracts visitors to Panauti's homestays. Rural homestays urgently need to transform and upgrade from their traditional style to the modernize service model which can provide a new balance between standardized services and customized experience (Xing, Li, & Xie, 2022). There is no need of radical reforms in Panauti, everything has its aesthetic meaning within its traditional setting, and 71 houses are more than 100 years old which have rich architectural and cultural values. All forms of sacred ceremonies are carried out in traditional houses (Andiani et al., 2020). Social organizations like local government, local peoples, and Guthi like philanthropic organizations are functioning together to have built a community building in Panauti and other social organizations have developed a spirit of cooperation. To improve the quality of service provided to tourists, relying on a single individual or institution may not produce the desired results.

Present mayor Ramsharn Bhandari shared some experiences. From the remarks, his experiences represented formal legal and politico-administrative conditions surrounding homestay in Panauti. He explained:

It is the role of the local government to offer the appropriate training in the homestay, to hygienize the items brought by tourists, and to regulate the homestay company. The municipality's primary role is to ensure that the administration of the homestay does not deteriorate. (R. Bhandari, Personal Communication, Feb, 2022)

Mayor Bhandari acknowledges that the homestay here has become infamous owing to bad management, which has a negative impact on the entire tourism administration inside Panauti town. As mentioned by Yusriadi et al. (2019), achievement of tourist satisfaction, serves to tourists as consumers, regulating body to quality of service provided by local governments. It can only be achieved by tourist satisfaction and locals' desire for additional tourist-related activities, as well as local people's representatives' obligations towards tourism. The municipality maintains the resources so that they are accessible to everyone. Gita Banjara, the current deputy mayor, spoke on the role of all stake holders in the homestays:

Local organic production should also be emphasized by homestay operators. The municipality and the local administration have now prioritized small companies. The municipality works hard to promote product marketing and gender equality. Homestays contribute significantly to income production. However, genuine female participation should be ensured and should not be regarded as mere tokens. (G. Banjara, Personal Communication, March, 2022)

Chairperson of Ward 7, Sabin Tamrakar narrated that:

'We are all responsible for sustainable tourism management in Panauti through homestay tourism, not just I, but our collective actions are a very significant element of tourism. However, collaboration among all locals and representatives is at the heart of tourist administration in the Panauti'. (S. Tamrakar, Personal Communication, March, 2022)

Ward chairman of ward 4 Dipak Pd. Dahal reported that:

We also have operating standards for municipal governments. There are additional difficulties concerning infrastructure construction, cleanliness, and history conservation for the development of local tourism; here is 'We' not 'I,' we are for Panauti's people and their development, tourism is not an exception. (D. P. Dahal, Personal Communication, March, 2022)

Poet and historian Surya Prasad Lakaju narrated:

Tangibly and intangibly, after Kathmandu, Panauti has tourism potential, but we have not been able to attract tourists due to a lack of marketing. (S.P. Lakaru, Personal Communication, March, 2022)

The tangible or intangible needs of the tourists can be met by new products (Albayrak et al. 2011). We might infer from his narration that there is still much work to be done. Tourism in Panauti is less reliant on its rich socio-cultural and historical significance. Homestays contribute significantly to the prosperity of tourism by supplying local products with a distinct local identity. Dilya Maya Deula, who is seventy-five years old, interprets the historical Panauti solely from a religious standpoint, she narrated:

The people of Panauti believe that when people fight or dispute in Panauti, it is often mentioned that Panuati is a holy area, but the people of Panauti are said to be impure. (D.M. Deula, Personal Communication, March, 2022)

Study of an individual's lived experience within (Neubauer et al., 2019) their own setting analysis of all stakeholders is not working together for the sake of preservation, it will late for every activity related to Panauti. If Panauti turns to be unholy, that will be one of the main threats in the next days. If Panauti loses its original identity, tourism in this area would be jeopardized. Mechhe Narayan Jhwaal, 73, interpreted tourism in Panauti:

The entire tourism of Panauti is due to Makar Mela and the religious beliefs and historical characteristics of Panauti. Because of the COVID-19 outbreak, everything in Panauti has lost its charm. (M. N. Jhwaal, Personal Communication, March, 2022)

He believed that the tourism business, such as homestays in Panauti, could only exist through joint functions between local people and government organizations. He also asserted that there are numerous flaws in tourist collective management. The remedy to such deficiencies is the collaborative efforts of all stakeholders; he expressed this at the end of the conversation.

Over here, the people's representatives and those with historical knowledge are reflected; when we talk about representatives, we are referring to the authority associated with the governing body and its connection in the public consciousness. People with socio-cultural awareness of Panauti prefer it as a culturally significant place of *Vagawan*; yet, administration is a huge concern here.

Modernization in homestay: a class reflection

Rural setting and indigenous identity is the key for the successful operation of rural homestay in the new era of consumption (Ma et al., 2022). It has been a strong support for fostering eco-friendly tourism around the globe by uplifting the local community (Dahal et al., 2020). Panauti, as a peri-urban (urbanized) area, is suffering some identity issues despite its historic identity. Modern pattern of constructions is causing sufferings to Panauti's indigenous housing pattern. Traditional houses have been used as homestays, as a new type of rural

tourism accommodation (Ramel & Wongso, 2021) but this is not happening in Panauti. Modernization in homestay in Panauti is conducting tourism in newly constructed structure. In both talking and doing, the prospect and the hindsight are distinct. One saying is popular in Nepali society, 'houses with traditional identity created by mud/soil are good for health and for identity preservation'. However, the vast majority of Nepalese people (even in rural areas) support RCC construction (building made by rod, cement and concrete). The study sample for this study consisted of 33 homestays. There are just 2 buildings made of soil in the Panauti region, out of 25 (17 from Panauti Community Homestay and 8 from Namaste Samudayik Homestay). Traditional dwellings constructed of dirt are good for health, and this article based on the phenomenon debunks this claim. People may appreciate historic houses intangibly, yet in tangible form, people desire to build modern residences. Biju Saiju, a member of Panauti Community Homestay, discussed her bitter experience as a widow in our culture. She runs her homestay from a typical earthen hut. Owners of ancient structural houses, according to her experience, are poor. Directly most people stand for and say that historic houses with traditional identity are beautiful things, however, in reality, this is the sign of 'being poor'. Majority of our direct and indirect communication consists of social topics which is supported by scholars like Jolly & Chang (2021) in their studies as well. In order to comprehend reality, indirect gossip and symbolic meaning are necessary. Rajendra Mahaju, a 28-year-old graduate and member of Namaste Samudayik Homestay with an old structure house performing homestays, has the same experience as the previous respondent (Biju Saiju). Mahaju works as a contract employee at Panauti Museum; he has a plan to build *Pakki Ghar* (RCC building), but he is unable to do so owing to economic constraints. He also stated that '*possessing a typical old house is an indication of poverty* (R. Mahaju, Personal Communication, August, 2022).'

Panauti is supposed to be an earthquake proof land. Even the 2015 super earthquake had only a little impact on the Panauti area. '*In this holy spot, earthquakes hit and aftershocks are felt, but actual damage has never been felt,*' said Dil Maya Deula. She further added, '*as you can see, no single structure has been harmed or cracked* (D. M. Deula, Personal Communication, March, 2022)'. Despite this, the locals in Panauti and the homestay owners wish to build a modern residence. Traditional houses in Panauti have a longer lifespan than other areas.

Working together: homestay is the path to prosperity

We, as a member of governance, are an integral component of tourism. Despite the fact that tourist governance is an under-researched topic in Nepal, it is a growing and important matter for policymakers, legislators, and local residents (Gautam et al., 2023). The inquiry led to the people's representative of Panauti Municipality, Bed Prasad Banjar, narrated about working together in homestay:

Many people were conducting research in Panauti at the time in order to achieve a breakthrough for the tourism industry by preserving culture, resources, and customs. Homestay is seen as an example of a link between underdeveloped and developed global civilizations in Panauti. (B. P. Banjar, Personal Communication, May, 2022)

Such an outcome may occur through the adoption of collaborative working 'in the tourism sector has impacted on the economic, social and environmental conditions of the tourism destination area' (Geoffrey et al., 2020).

Vice chairperson of Namaste Samudayek Homestay of Panauti Bhawanath Wagle, said:

'Panauti's tourism prosperity and tourism-related activities are beneficial in some ways and poor in others. There are numerous advantages to homestay tourism in Panauti. The emergence of new social structures bodes well for tourism governance. Research and study are crucial to find out fresh potentiality in the locality. (B. Wagle, Personal Communication, May, 2022)

Wagle is lecturer of sociology in nearby Tej Ganga Multiple Campus; from his sociological perspective isolation degrade the use of homestay tourism. He also discussed sustainable development and resource management during the conversation. He shared that, '*Sustainable development in Panauti homestay tourism involves sustainability in resources and sustainable development in tourism means focusing on policies* (B. Wagle, Personal Communication, May, 2022)'. The assessment to improve sustainability in the tourism industry has been widely recognized and redistributed (Graci, 2013).

Shila Amatya, President of Panauti Community Homestay, has first hand knowledge of stakeholder collaboration for community-based tourism such as homestay. She reports:

'In Panauti, homestays have generated several chances for cultural exchange. Collaboration between diverse industries is required. Work has been done in collaboration with the local administration, Guthi, and mother groups. When tourists visit the home stay, we invite local mothers' organizations to display their artwork. We also offer money to these organizations in order for them to show the art culture to the visitors. (S. Amatya, Personal Communication, May, 2022)

According to her, the most common route for homestay is through personal and community bonds. Sangita Shrestha, President-Namaste Homestay narrate her reflection about homestay as:

Homestay tourism is the crucial for community's development in terms of individuals, socioeconomics, and languages. With the assistance of the state government, Homestay has constructed a community hall. Apart from that, we have a lot of other things to do. Moral support has been supplied by the local administration and affiliated parties. (S. Shrestha, Personal Communication, May, 2022)

Individualistic techniques are ineffective in the tourism industry, particularly in homestays. For the smooth operation of homestay tourism, conglomeration is the primary road. Artificial settings are unsuitable for community-level tourism; instead, visitors come to enjoy a real experience. In order to fulfill travelers' desires, it is important that tourists enjoy an authentic tourism experience while contributing to the local community's well-being (Usmonova et al., 2022). Using a minimal budget for tourism in a local environment is a symbolic process of community participation and upliftment through empowerment. Local people's empowerment is essential to ensure local community members benefits from tourism development (Adenike & Jim, 2022). The community is there for community sake through social innovation. In the very gross level social innovations provides a useful framework to conduct comprehensive research on innovations in tourism (Wirth et al., 2022).

Conclusion

This study was undertaken in two homestays, and the interesting thing is that both homestays are thoroughly supervised and managed by female chairpersons. They are role models for all women and are determined to break down all social and cultural boundaries. They are not tokenized here as they have played active roles in the homestay administration. According to the findings, the core tourism locations represented by Panauti have a high level of synergistic

interactions between homestay owners and local government. Synergistic efforts in community-led tourism have resolved local problems and fostered community cohesion by fostering healthy relationships in the local production system. Tourism in the local region is impossible without the participation of multiple stakeholders; this study observed the collective assessment of community-based tourism on the functions. Homestay is a communal activity and a massive family-based tourism company with significant implications for Nepali tourism.

Since community-based tourism is a significant component of the tourism sector, it is imperative to emphasize the participation of all level of modernization and management. But many things are falling apart. Traditional identity is being lost day by day in the name of progress; it is the most difficult aspect of the tourism sector. Fancy practices have an impact on homestay tourism as well; there are fewer traditional residences. A person with traditional dwellings is considered impoverished in the community. At this point the people's representatives are much needed to educate the concerned ones to rethink on such unworthy ideas of old house and poverty concept. Collaboration with all responsible players is at the heart of sustainable tourist development. Homestays in Panauti will not survive without synergistic functions amongst all stakeholders.

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Conflict of interest

The author/s declared no conflict of interests.

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Exploring Tourism Destination: A Potential of Mountain Tourism in Sudurpaschim Province

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Abstract

Exploring competitiveness of tourism destinations is very important in order to understand problems and potentials of regional tourism development and formulation of effective tourism strategies. Most of the tourists and tourism activities in Nepal are concentrated and clustered in central and north-eastern part of the country. In this context, the current paper assesses the existing status of tourism resources at provincial level and focuses on potentials and challenges in the far-western province. Three major components of tourism competitiveness as identified by Ritchie and Crouch (2003) namely, primary resources, secondary resources and tourist demand were analyzed based on 6 selected indicators and 25 variables identified by Goffi (2013). A total of 3224 sites in seven provinces were identified under core tourism resources. Core tourism is rated highest in competitiveness, while tourism policy and planning resulted a lowest rating. Bagmati has the highest score whereas Karnali has the lowest in overall competitiveness. Greater level of dispersion is found in adventure and leisure tourism resources. The study found that, though strategies like diversification and improvement of tourism products and the new area are acknowledged, specified 200 destinations under Visit Nepal 2020 don't adhere to such standards. Visit Nepal 2020 identified the least number of touristic destination in Sudurpaschim. Though tourism infrastructure and services are found to be fair in the Sudurpaschim province, while destination promotion through digital platforms is limited. Increasing repetitive visits and seasonality are major areas of concern with the lowest rating value. It is concluded that the development and promotion of adventurous and leisure activities in Sudurpaschim have potential to diversify inbuilt seasonality of other provinces and increased length of stay. Essentially, local inhabitants should be encouraged in tourism sector, who are the immediate and most important stakeholders to proliferate the competitiveness of tourism destinations.

Keywords: destination, tourism policy and planning, tourism resources, tourism services

Introduction

Nepal is a mountainous country and it embraces eight of the fourteen highest mountain peaks above 8000 meters in the world. Mountain tourism is one of the most important constituents of tourism development in Nepal which provides a means of livelihood of mountain community. Mountain and hill region of Nepal offers adventurous and attractive natural touristic sites for activities like; mountain climbing, hiking and trekking, white river rafting, paragliding, etc. as well as cultural and heritage attractions. According to World Tourism Organization, UNWTO (2022), two hundred-thirty thousand tourists visited Nepal, generating around 238 million US dollars in the tourism sector, which corresponds to 0.71% of its the gross domestic product. These tourists came from different countries to enjoy natural/scenic beauty and local culture and tradition. Of the total tourist arrivals in 2020, 61% came for

holiday/pleasure, 16 %came for trekking and mountaineering, and 12% came for pilgrimage (MoCTCA, 2022).

Sudurpaschim province (Far-West province) is one of the 7 provinces of Nepal occupying 13.22% land with spatial coverage of 19515.52 km² (DoS, 2021). It comprises 9 districts and provides diverse tourist attractions like Suklaphanta National Park and Ghodaghodi lake in Tarai region to Api-Nampa Conservation area in mountain region. In-between lies, Khaptad National Park in hill region (Mahabharat range area) of the country. The natural landscapes, geographical landforms, and climatological environments of the region also provide distinctive perspectives and offer unique experiences. Besides, it comprises a number of important historical and cultural/religious sites of the country. However, tourist flow in this part of the country is relatively, low as compared to other provinces. It is evident from the 2019 tourist arrival data that, despite comprising three large national parks and conservation areas, only 0.1% of the total tourist visited national parks and conservation area of Sudurpaschim as compared to 77% in Gandaki province (MoCTCA, 2022).

Despite, the immense potentials of tourism development, it is not flourished to its full potential. Mountain tourism development in Sudurpaschim province, not only reduces the overcrowding and clustering of tourist and tourism activities in central and north eastern part, particularly Everest region, but also diversifies tourism destinations and opens livelihood options of mountain people of the region. However, research in this area is very limited. Measuring competitiveness of tourism destinations is very important in order to understand problems and potentials of regional tourism development and formulation of effective tourism strategies. In this context, the current study tries to assess the status of tourism resources, services including tourism product, development infrastructure, awareness and promotion and explore the competitiveness of tourist destinations in Sudurpaschim province.

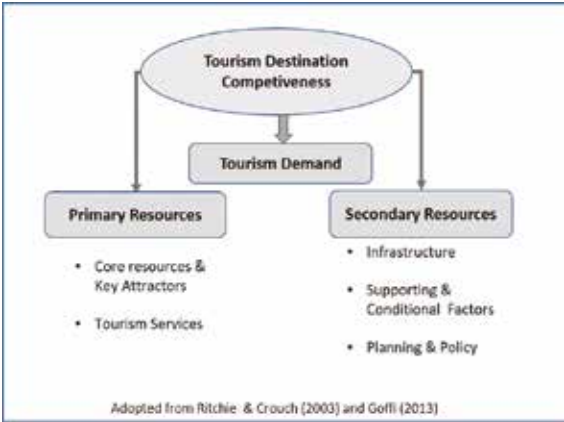
Conceptual framework

Sustainable tourism is an approach which focuses on economic, environmental and social benefits of tourism (White et al., 2006). This approach emphasizes on efficient resource management and development of competitive tourism activities by maintaining socio-cultural integrity and bio-ecological processes and diversity (Lozano-Oyola et al., 2012). Competitiveness of tourism destinations is the one of the decisive attraction factors of increased and regular tourist flow (Goffi, 2013). Competitiveness, in recent literatures is more linked to sustainability aspect (environmental, social and local economic benefit) of tourism destination (Cucculelli & Goffi, 2016; Artal-Tur & Kozak, 2015) besides tourist expectations, satisfaction and demand potential (Chatzigeorgiou & Christou, 2016; Dwyer & Chulwon, 2003; Ritchie & Crouch, 2003). Nonetheless, competitiveness of the destinations is dependent on and influenced by various factors. According to Ritchie and Crouch (2003), the destination competitiveness is also determined by comparative resource endowment and competitive advantages based on resource deployment. They have identified three major components of tourism competitiveness: i) primary resources and activities, which refer to core resources, attractors, and tourism services, ii) secondary resources and activities, which refer to infrastructure, destination management, and tourism planning and policies, and iii) tourist demand. Likewise, different methods to measure competitiveness are identified and two broad approaches applied are quantitative/deterministic and qualitative analysis based on different sets of indicators (Liu et al., 2022; Lopes et al., 2018; Cibinskiene & Snieskiene, 2015; Goffi, 2013; Enright & Newton, 2004; Ritchie & Crouch, 2003). This study is based on

integrated approach by adopting tourism component of Ritchie and Crouch (2003) and selected tourism destination competitiveness indicators of Goffi (2013) as presented in Figure 1.

Figure 1

Conceptual framework

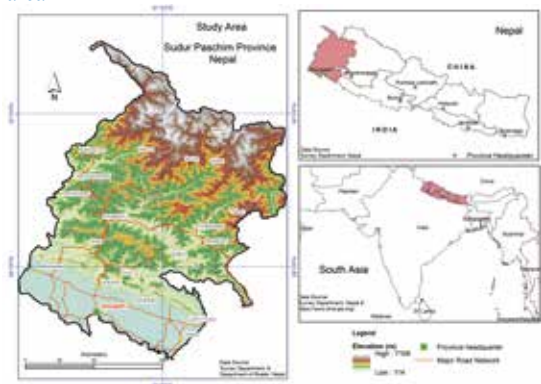


Study area

Sudurpaschim Province covers 13.22% land of the country with spatial coverage of 19515.52 km² (DoS, 2021). It comprises 9 districts extended in three ecological regions from south to north, namely, Tarai includes two districts, Hill includes four districts, and Mountain includes three districts. The capital of the province is Dhangadhi located in Tarai region of Kailali district. The elevation of the province ranges from 114 to 7108 meter from mean sea-level (Figure 2). According to the preliminary result of the national census of 2021, the total population of this province is more than 2.7 million (27,11,270), with a density of 136 persons per km² (CBS, 2021). The inter-census annual growth rate is reported as 0.58 and the sex ratio is 90.49, which is the lowest among all 7 provinces. The Khas/Chhetri is the major ethnic/caste group and major spoken languages include Doteli followed Nepali and Tharu. *Deudanaach*, *Thadibhaka*, and *Hudkeuli*, are famous cultural dances and songs of the province.

Figure 2

Location map of the study area



Material and method

The current study is carried out at two levels based on an integrated approach using both primary and secondary data sources. At first level, spatial distribution of core primary touristic sites at provincial level, was explored using a GIS tool. GIS data layers of touristic resources (sites), infrastructure and services, and topographical features are obtained from Google Earth, Open Street Map (OSM), and topographical sheets from Survey Department of Nepal. Major touristic sites were field verified during 2021. A structured field protocol and checklist were developed and used separately for field verification of tourist sites. Relevant tourism reports from tourism department of Nepal and Tourism Board, past empirical researches, policy documents and journal articles were reviewed to assess the tourism development situation in Sudur Paschim Province. A total of 3224 sites were identified under core tourism resources. These sites were grouped into 4 categories of adventure and leisure (341 sites), cultural and religious (1296 sites), historical and archaeological (456 sites) and natural resources (1131 sites). The percentage share and coefficient of variation (CV) was calculated to measure the dispersion in site location.

At the second level, key expert informant evaluation through interview methods and informal discussions with locals were carried out. Interview with a total of 30 key expert informants, with at least 7 years of experience in and knowledge of tourism sector, was carried out which included 18 from 9 districts of Sudurpaschim (2*9) representing tourism services (accommodation and travel service local entrepreneurs, local tourism authorities), 9 district level tourism authorities and 3 national tourism experts. Informal discussion was carried out with locals and community leaders who have more than 5 years of experience in and knowledge of tourism sector besides tourists found visiting the sites at the time of field work were also consulted.

Table 1
TDC indicators and variables

Component	Indicators	Variables
Primary Resources	Core Resources & Attractors	Natural Resources
		Historical/Archaeological
		Cultural/Religious
		Adventure and Leisure Activities
		Green area and Natural Landscape
	Tourism Services	Accommodation Quality/Hospitality
		Accommodation Quantity
		Tourist oriented services/e-tourism
		Gastronomy (Typical/Local food product)
Secondary Resources	Infrastructure	Road Connection/Accessibility
		Communication
		Health
		Sanitation

	Supporting Conditional Factors	Accessibility to destinations
		Proximity of destinations
		presence of local business/entrepreneurs
		Community involvement
	Planning & Policy	Integrated approach
		Public sector Commitment
		Participatory Tourism Planning
		Promotion
Tourism Demand	Tourism Demand	Tourist awareness
		Seasonality
		Preference
		Repetitive visit

There are number of studies on tourism destination competitiveness (TDC), which have identified range of indicators and variables. The major literature reviewed on indicators and variables for the current include Liu, 2022; WEF, 2022; Kunst, & Ivandić, 2021; Goffi, 2013; Dupeyras & Mac Callum, 2013; White et al., 2006; Dwyer & Kim, 2003; Ritchie & Crouch, 2003. However, these studies show that there is no a specific, standard group of indicators applicable to any destination and researchers has established different group of indicators and variables based on local physical and socio-cultural context as well as level of economic development, which are considered to be the most relevant features to achieve competitiveness (Dwyer & Kim, 2003).

After a review of these studies, three major components based on Ritchie and Crouch (2003) and 6 selected indicators and 25 variables based on Goffi (2013) were selected and grouped under i) primary resources, ii) secondary resources and iii) tourist demand. As depicted in Table 1, under primary resources 2 indicators, namely, core tourism resources with 5 variables and tourism services with 4 variables were selected (Table 3). Under secondary resources, 3 indicators, infrastructure, conditional factors and tourism policy and planning, each with again 4 variables were selected. Similarly, Demand indicator comprised 4 variables (tourism awareness, seasonality, preferences and revisit).

Key informants were asked to rank each variable based on their experience and knowledge. Variable ranking as adopted by Rheeders (2022) was adopted for each variables and were ranked from 1, the lowest to 5, the highest in Likert scale and aggregation of scores using weighted arithmetic mean was calculated (WEF, 2022; Cibinskiene & Snieskiene, 2015) for each indicator to analyze the competitiveness. Studies indicate that competitiveness analysis using qualitative surveys like opinion survey and quantitative measurement using statistical methods and indices together provides basis for comparative analysis. But combining data is challenging for interpretation as many of the factors and indicators are difficult to quantify, and relate to perception, and are context-specific (Dias, 2017).

Results and discussion

Primary resources

Core tourism resources and tourism services are selected as primary resource indicators.

Core tourism resources includes nature-based resources like bio-geographic, natural protected heritage, diverse ecosystems and landscape, hydrographic sites as well as anthropogenic tourist attractions like historical, cultural/religious sites, adventurous, recreational and leisure based activities (Knezevic, 2008). Nepal has numerous existing and potential core tourism resources. However, spatial distribution of these resources is varied as evident from Table 2. Bagmati and Gandaki followed by Koshi share the highest number of core resources, whereas Sudurpaschim comprises the minimum share followed by Madesh and Karnali Provinces. Adventure and leisure resources are also limited in Madesh and Sudurpaschim followed by Karnali. Among 4 categories, Sudurpaschim Province has dominant historical and archaeological resources followed by natural resources.

Table 2

Percent share of core tourism resources of Nepal

Province	Core Resources (% share)			
	Leisure/ Adventure	Cultural/ Religious	Historical/ Archaeological	Natural
Koshi	12.90	18.11	9.01	21.50
Madesh	0.88	16.85	3.74	5.84
Bagmati	36.07	21.62	19.56	20.80
Gandaki	34.02	16.18	26.81	21.33
Lumbini	9.97	13.64	21.76	10.09
Karnali	4.11	5.48	9.45	11.95
Sudurpaschim	2.05	8.12	9.67	8.50

Source: MoFA, 2019, GoogleEarth, OSM, 2021, Field 2021

The coefficient of variation, CV among 4 categories of core resources reveal that greater level of dispersion is found in adventure/leisure tourism resources (Table 3). It requires relatively higher investment in infrastructure including safety. The lowest variance value of cultural and religious resources followed by natural tourism resources indicates uniform spatial distribution over the provinces.

Table 3

Variation in core tourism resource distribution

Core Tourism Resources	Mean	Standard Deviation	Coefficient of Variation
Adventure/Leisure	48.71	46.78	0.960
Cultural/Religious	899.43	331.93	0.369
Historical/Archaeological	65.00	35.43	0.545
Natural	161.429	70.441	0.436

So far as TDC in core resources is concerned, natural resources and green natural landscape are regarded as the dominant attractor in contrast to adventure and leisure activities. Quality and hospitality are rated highest among services in comparison to e-tourism (online services), local products and quantity (Table 4). In overall scoring, core resources are rated relatively higher than tourism services, indicating improvements are needed in tourism service sector.

Sudurpaschim province is found to be in fourth place (together with Koshi and Karnali) regarding core resources and attractors whereas falls in fifth place regarding tourism services.

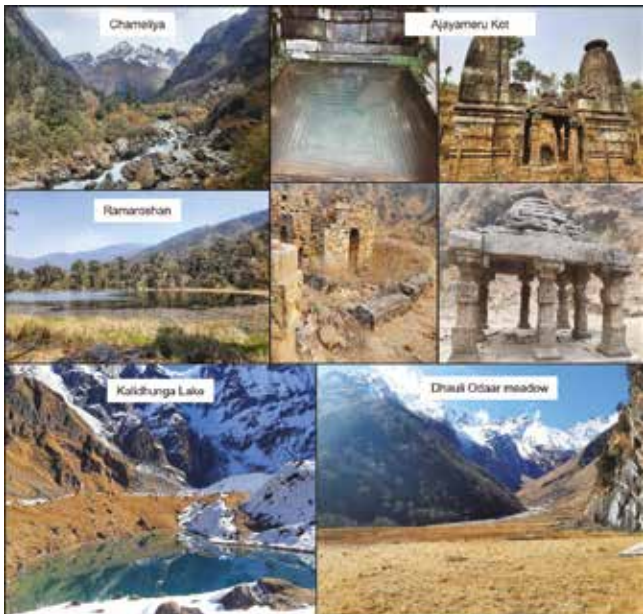
Table 4

Tourism core resources and services rating and score

Indicator	Variables	Sudurpaschim	Karnali	Lumbini	Gandaki	Bagmati	Madesh	Koshi	Total	Rating
Core Resources Attractor	Natural Resources	5	5	5	5	5	5	5	35	5.00
	Historical/ Archaeological	4	4	5	4	5	4	3	29	4.14
	Cultural/Religious	3	3	3	4	4	3	3	23	3.29
	Adventure and Leisure Activities	1	1	1	2	2	1	2	9	1.29
	Green area and Natural Landscape	5	5	5	5	5	4	5	34	5.00
	Sum	18	18	19	20	21	17	18		Score
	Mean	3.6	3.6	3.8	4	4.2	3.4	3.6		3.74
Tourism Services	Accommodation Quality/Hospitality	2	1	4	5	4	2	3	21	3.00
	Accommodation Quantity	2	2	4	4	4	2	2	20	2.86
	Tourist oriented services/ e-tourism	1	0	2	2	3	1	2	11	1.43
	Gastronomy (Local specialty/product)	3	2	3	3	4	1	3	19	2.71
	Sum	8	5	13	14	15	6	9		Score
	Mean	2	1.25	3.25	3.5	3.75	1.5	2.25		2.00

Some of the most attractive tourism destinations in Sudurpaschim, beside Khaptad National Park, are Api-Nampaand Saipal mountain region with a number of mountain peaks, meadows, e.g. Dhauli-Odaar, Kalidhunga Lake, Ramaroshan, Ajayamerukot, Chameliya River and surrounding villages in the mountain and middle hill region (Figure 3). Suklaphanta National Park, Ghodaghodi Lake and Ramsar area, Shivapuridham are major destination in Tarai plain.

Figure 3
Core tourism resources of Sudurpaschim



Secondary resources

Infrastructure, supporting/ conditional factors, and

tourism policy and planning at local and national levels are selected as secondary resources. Transport and connectivity, communication network, supply system are major factors which largely determines the tourist flows. Distribution and density of existing road infrastructure is concentrated in relatively flat area i.e. Lumbini and Madesh Provinces, whereas Karnali has the lowest transport infrastructure followed by Gandaki (Figure 4).

Figure 4

Road density by province

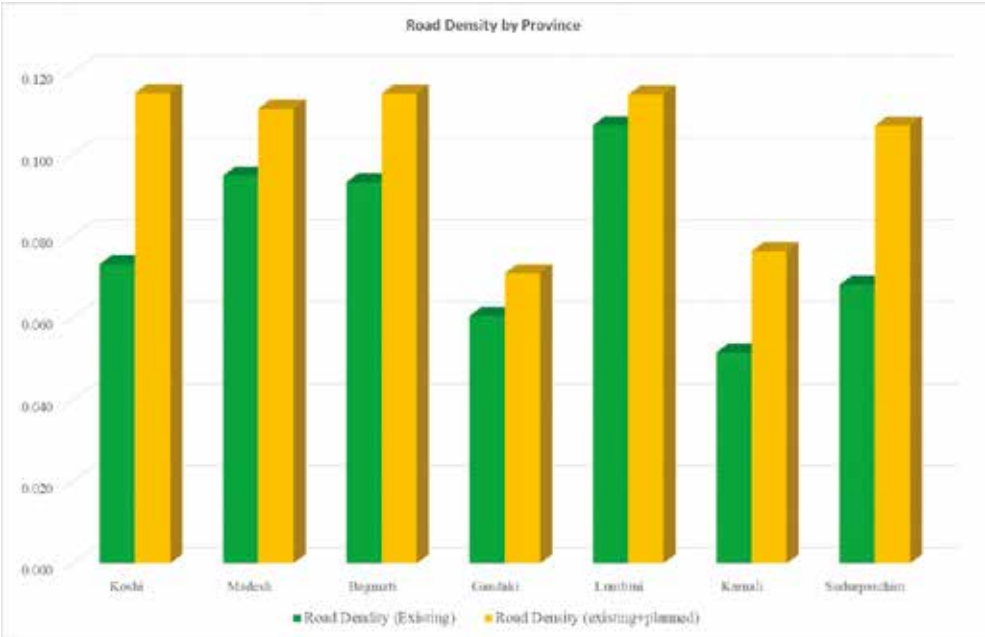
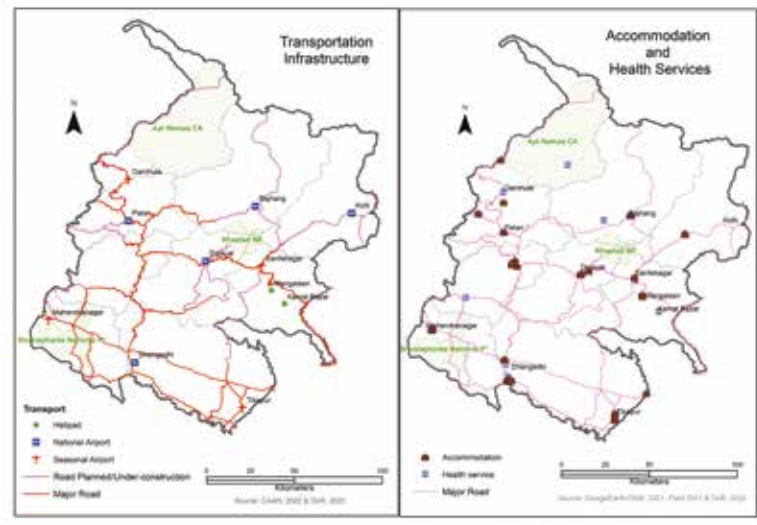


Figure 5

Infrastructure and facilities in Sudurpaschim Province

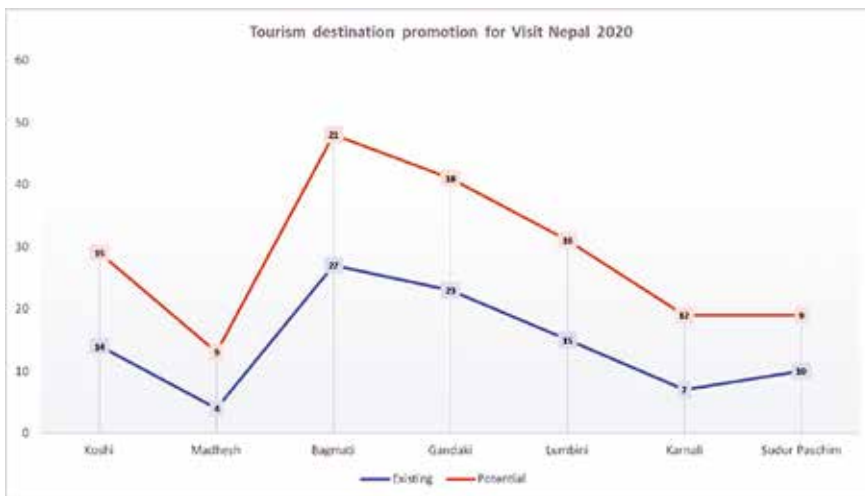


However, number of road construction projects are ongoing, including Midhill highway in Sudurpaschim province. It is apparent that after the completion of road under construction and planned road, transport infrastructure facility will enhance tourism competitiveness. Besides, air transport service in the province is also comparatively good as it has 8 airports (5 national and 3 seasonal) of which 6 airports are in-operation (Figure 5). There are 138 accommodation facilities located in district headquarters and along major road junctions. These accommodation facilities include 19-star hotels and resorts.

In 2019, Government of Nepal specified 100 existing and 100 potential tourism destinations for the tourism year promotion in 2019-2020 arrivals (MoCTCA, 2020). Of the total potential destinations, highest number of destination (n=21) is identified in Bagmati followed by Gandaki (n=18) and Lumbini (n=16). Number of existing destinations for promotion and improvement are also the highest in Bagmati followed by Gandaki and Lumbini (Figure 6). One of the major approaches identified in National tourism strategy plan 2013 (NTSP, 2013) is diversification and improvement of tourism products and location of new area within 2014-2019 (MoCTCA, 2013). However, specified 200 destinations under visit Nepal 2020 doesn't adhere to such approach of diversification of tourism to potential and less explored existing sites.

Figure 6

Number of tourist destination identified for Visit Nepal 2020



While evaluating the competitiveness of secondary resources, policy and planning are rated at the lowest (1.68) in comparison to infrastructure and conditional factors (Table 5). Conditional factors like proximity of destinations and accessibility to destination is regarded as most positive factor which is also indicated by even spatial distribution of road and air transportation infrastructure. Planning according policy and implementation of policy into practice is major challenges in most cases. Competitiveness of supporting and conditional factors in Sudurpaschim is found to be higher (2nd place) whereas it falls in 5th place regarding infrastructure and 4th place regarding policy and planning. Promotion of core resources having low tourist flows despite attraction factors in the study area and participatory tourism planning is least practiced according to the key informants. It is followed by presence of local business and entrepreneurs in tourism sector.

Table 5*Rating and score of secondary tourism resources*

Indicator	Variables	Sudurpaschim	Karnali	Lumbini	Gandaki	Bagmati	Madesh	Koshi	Total	Rating
Infrastructure	Road Connection/ Accessibility	2	1	3	4	4	3	2	19	2.71
	Communication	2	1	3	4	4	3	2	19	2.71
	Health	1	1	1	2	3	1	1	10	1.40
	Sanitation	1	1	2	3	3	2	2	14	2.00
	Sum	6	4	9	13	14	9	7		8.71
	Score	1.5	1	2.25	3.25	3.5	2.25	1.75		2.18
Supporting/ Conditional factors	Accessibility to destinations	3	1	3	4	4	3	3	21	3.00
	Proximity of destinations	3	2	4	4	5	3	3	24	3.43
	presence of local business/entrepreneurs	2	1	2	2	2	1	1	11	1.57
	Community involvement	4	4	3	1	2	3	3	20	2.86
	Sum	12	8	12	11	13	10	10		10.86
	Score	3	2	3	2.75	3.25	2.5	2.5		2.71
Policy & Planning	Integrated approach	2	1	1	2	2	1	2	11	1.57
	Public sector Commitment	2	1	3	4	4	2	3	19	2.71
	Participatory Tourism Planning	1	1	1	2	2	0	2	9	1.30
	Promotion	1	0	1	3	2	0	1	8	1.14
	Sum	6	3	6	11	10	3	8		6.71
	Score	1.5	0.75	1.5	2.75	2.5	0.75	2		1.68

Tourism demand

The tourist flow pattern in protected areas of the country has changed rapidly within the duration of six years (Table 6). The flow is frequent and intense in Gandaki, Bagmati and Koshi Provinces. In 2015, the majority of tourists visited protected area sites in Bagmati Province, which shifted to Gandaki Province in 2020, comprising slightly more than 77% of total tourist flow. Gandaki and Koshi provinces comprised more than 91% of tourist flow in 2020, whereas tourist flow decreased to 6.3% in Bagmati within a time period of 5 years. The tourist flow shifted to Gandaki followed by Bagmati again in 2021. The decreasing trend of tourist flow is evident in Madesh Province, whereas tourist flow is on a gradual increase in Karnali and Sudurpaschim Provinces, and a variable trend is visible in Lumbini Province. Preceding data on protected area visitors also show that Sudurpaschim received less than 1% of total international arrivals (MoCTCA, 2022).

Table 6*Tourist flow in protected areas of Nepal*

Province	Name	Spatial coverage (% share to total provincial area)	% share to country area	% tourist flow 2015	% tourist flow 2020	% tourist flow 2021
Koshi	Makalu-Barun, Sagarmatha, Koshi Tappu*, Kanchanjunga	18.08	3.17	9.818	14.00	21.45
Madesh	KoshiTappu*, Parsa*, Chitwan*	8.30	0.54	0.072	0.05	0.04
Bagmati	Langtang, Chitwan*, Shivapuri-Nagarjun, Parsa*, Gaurishankar	20.69	2.85	53.197	6.30	32.46
Gandaki	Annapurna, Dhorpatan, Manaslu	48.95	7.13	33.039	77.40	43.31
Lumbini	Bardiya, Banke, Dhorpatan*, Krishnasar	6.89	1.04	3.728	1.90	2.35
Karnali	Rara, Shey-Phoksundo	13.08	2.48	0.145	0.20	0.28
Sudurpaschim	Api-Nampa, Khaptad, Suklaphanta	12.22	1.65	0.001	0.10	0.12

*Source: DNPWC, 2021 & GIS data calculation***part of protected areas*

While analyzing the competitiveness of tourism demand, it is found to be at the 2nd lowest position (1.93) just above policy and planning (1.68) under secondary resource component. Among four variables of tourism demand, Repetitive visit has the least competitiveness score followed by seasonality (Table 7). Sudurpaschim lies in the 5th position regarding competitiveness on tourism demand and shares the least value in all four variables, in parallel to Karnali and Madesh province.

Table 7*Rating and score of tourist demand variables*

Indicator	Variables	Sudurpaschim	Karnali	Lumbini	Gandaki	Bagmati	Madesh	Koshi	Total	Rating
Tourism Demand	Tourist awareness	1	1	3	4	4	1	2	16	2.29
	Seasonality	1	1	2	3	3	1	2	13	1.86
	Preference	1	1	3	4	3	1	2	15	2.14
	Repetitive visit	1	1	1	3	2	1	1	10	1.43
	Sum	4	4	9	14	12	4	7		7.71
	Score	1.0	1.0	2.3	3.5	3.0	1.0	1.8		1.93

The Tourism Master Plan of Sudurpaschim (MoITFE, 2022) targets to increase 30% (average annual growth) of tourist arrivals, increase length of stay, and raise tourism's GDP contribution

to 10% by 2032, which in its current state is less than 1%. Identification of new tourism products, improvement of infrastructure and destination management are major strategies among 10 identified strategies. Opening of new cultural circuit as a gateway to larger Kailash Sacred Landscape (KSL) is the most potential attractor for increasing Indian and international tourists. In this setting, as per the key informants, the most determinant factor is awareness of tourists regarding destinations, which is directly linked to promotion at international level. Increasing repetitive visits and seasonality are major area of concerns which currently has scored the least rating value.

Overall competitiveness

A z-score was calculated to measure the overall tourism destination competitiveness. It shows that, core resources and key attractors received the highest rating among six indicator followed by supporting and conditional factors (Table 8). Policy and planning (to implementation) on the other hand, received the lowest rating followed by tourism demand. In case of competitiveness at province level, it is found that only three provinces namely Bagmati, Gandaki and Lumbini is above mean value where other four are below mean score value. Sudurpaschim province is in 5th position showing larger competitiveness gap between the first ranked Bagmati province. However, it has received the second highest score on supporting and conditional factors showing the relatively proximate destinations and better condition of participation, local entrepreneurship and accessibility to destination.

Table 8

Overall tourism destination competitiveness

Province	Total scored value* (5x25)	% share* (5x25)	Core Resources Attractor	Tourism Services	Infra-structure	Conditional factors	Policy & Planning	Tourism Demand	Overall Score	Rank
Bagmati	84.00	67.2	1.79	1.32	1.36	1.38	1.13	1.13	1.40	1
Gandaki	83.00	66.4	1.01	1.05	1.36	0.09	1.47	1.65	1.34	2
Lumbini	68.00	54.4	0.22	0.78	0.09	0.74	-0.25	0.34	0.34	3
Koshi	60.00	48.0	-0.56	-0.04	-0.54	-0.55	0.44	-0.19	-0.19	4
Sudurpaschim	54.00	43.2	-0.56	-0.58	-0.86	0.74	-0.25	-0.98	-0.59	5
Madesh	49.00	39.2	-1.34	-1.13	0.09	-0.55	-1.27	-0.98	-0.92	6
Karnali	42.00	33.6	-0.56	-1.40	-1.50	-1.84	-1.27	-0.98	-1.38	7
Sum	440.00		131.00	71.00	61.00	76.00	47.00	54.00		
Mean	62.86		18.71	10.14	8.71	10.86	6.71	7.71		
SD	15.08		1.28	3.68	3.15	1.55	2.91	3.81		

Note: *Maximum score value (5) for 25 variables

Potential

Though tourism destinations promotion for diversification, diversion of tourist to low tourist flow areas and identification and promotion of new sites are stipulated strategy of government (MoCTCA, 2013), the implementation of 10-year strategic plan doesn't exhibit such practice. To date, major tourism destinations of the country listed on the government tourism authority sites do not include a single tourism site from Sudurpaschim Province. Likewise, top destinations and places recommended to visit in Nepal by 10 travel and tourism websites,

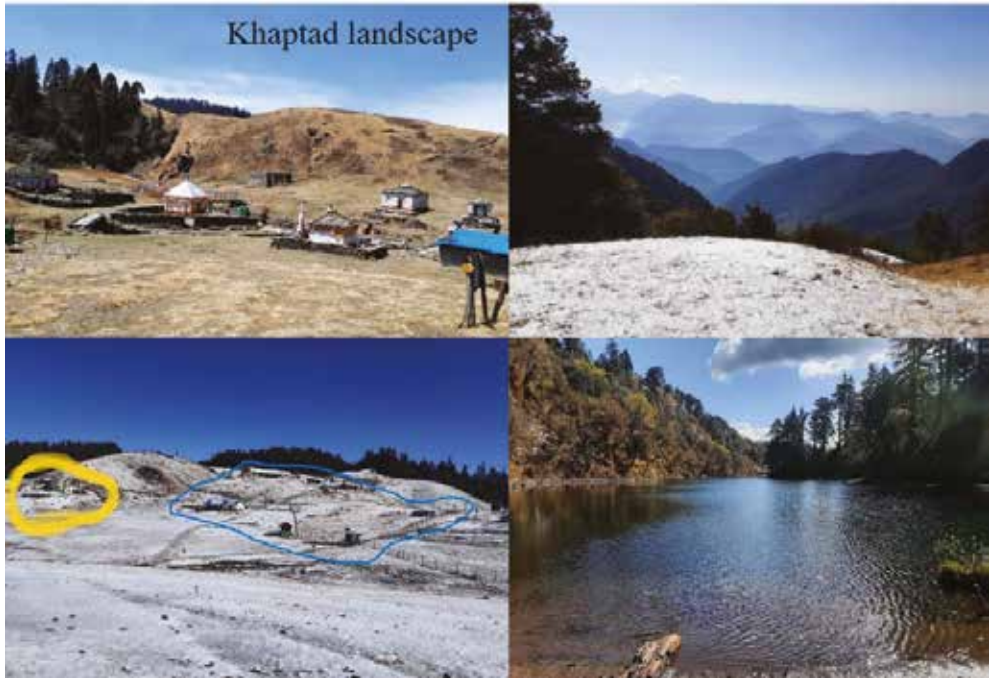
namely National Geographic (top 5), Lonely Planet (top 12), Planetware (top 15), Tripadvisor (top 12), TripCraft (top 11), Himalayan Glacier (top 12), Holidify (top 33), and Thrillipila (top 56) don't mention a single site from Sudurpaschim, whereas 2 sites, Touropia (top 12) and TravelTrinagle (top 42) mentioned Khaptad and Suklaphanta national parks.

The tourist entry charge for trekking is also higher in the protected area of Sudurpaschim as compared to other protected areas in Bagmati, Koshi and even some of Karnali province (lower Dolpa and Humla), which is another factor affecting the tourist flow and re-visit.

The most potential site for immediate tourist flow is Khaptad National Park (Figure 7). It is one of the most accessible protected area (entry point only 16 Km from major highway), well managed and relatively easy route with tranquil surroundings still visited by very few tourists. This national park should be promoted as nature based eco-tourism site, hill-station for Indian tourists. Promotion of value-added recreational activities like ski and other winter recreation could be targeted for international tourists.

Figure 7

Landscapes of Khaptad National Park



Promotion of eco-tourism, i.e., promoting tourism by protecting nature and generating employment and income for rural and remote mountainous regions, must be the main strategy, which is an integrated approach to protection and conservation of nature and the local environment, enhancement of local livelihood and community ownership, and utilization of local resources in tourism infrastructure with relatively lower investment such as community homestays and conservation-based hiking and trekking. On the other hand, a regular monitoring and evaluation strategy by government authorities, performance through the measurement of efficient resource use, sustainability, and balanced tourism carrying capacity,

shall contribute to effective strategic and operational actions for tourism policy implementation (Cracolici et al., 2006).

Despite core tourism resources like a pristine natural environment, abundant wildlife, and rich culture and traditions, tourism development in the country is not up to expectation because policy implementation has remained one of the major issues (Ghimire, 2009; Stevens, 1988).

Conclusion

Natural resource endowments enhance provinces potential for tourism development and economic growth. Core tourism resources positioned in different ecological regions of Sudurpaschim Province provide ample tourism potential despite tourism destination promotion and modest tourism infrastructure development in the hill and mountain regions, which has remained major challenges. There is an obvious spatial differentiation in tourism competitiveness among seven provinces, as well as the 3 ecological regions and 9 districts of the Sudurpaschim province, besides distinctive competitiveness among seven provinces. This provides greater opportunities for diversification of current tourist flow pattern leading to sustainable tourism development through efficient planning strategies contextualizing unique geographic characteristics for improving local economy and livelihood options in Sudurpaschim province of Nepal.

The development and promotion of adventurous and leisure activities has potential to diversify inbuilt seasonality and increase length of stay, which are also emphasized on Tourism Master Plan (2021/22–2031/32) of Sudurpaschim Province. Livelihood and economic benefits from tourism are determinants of the local people's ownership feelings. Ownership by local community is of vital importance for sustainable and responsible tourism development. Local residents are immediate and most important stakeholders who help to proliferate the competitiveness of tourism destinations.

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Mountain Tourism Workforce's Resilience during COVID Pandemic

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Abstract

Nepal is a home to different famous mountains including Mount Everest, the highest mountain of the planet. The geography of Nepal is both an opportunity and a threat to the country and the communities. More than 15 percent of land lies in mountainous regions where tourism is the major profession to rely on for the communities. However, the region encountered one of the greatest threats in the form of COVID-19 which restricted people's mobility. The livelihood of the mountain communities which are directly or indirectly dependent on tourism was severely affected by COVID-19. The prime trait that helped minimize the damage was the resilience of the mountain community. This qualitative study attempts to assess the resilience (community resilience) of mountain people with the cases from the Everest and Annapurna region and analyze it against the theory of resilience.

Keywords: mountain tourism, resilience, community resilience, COVID

Introduction

The earth has been witnessing unprecedented phenomena for the last few decades. These phenomena including global warming, melting of mountains, threats of Glacier lake outburst flood, and rise of ocean level have been severely affecting the global tourism (UNWTO, 2022). Amidst these uncertainties, the world experienced the pandemic of COVID in 2019 which posed the greatest threat to the global tourism industry as the restriction of mobility of people was a must to overcome the pandemic.

During the pandemic, the tourism industry witnessed almost a nil number of tourists and had to deal with the biggest plunge in revenue. The UN World Tourism Organization (UNWTO) projected a loss of approximately 910 billion USD in export from Tourism and claimed that more than 100 million jobs were threatened (UNWTO, 2022). A similar fate was being projected and experienced in Nepal where the tourism industry had a direct share of approximately seven per cent in the national GDP in 2018 (WTTC, 2022).

The highlands of Nepal above 3000 metres of sea level are famous for their beautiful landscapes and diverse communities and culture which ultimately have made the mountain of Nepal one of the best tourist destinations of the world. The highlands are home to majestic mountains where people trek and experience serene landscapes and culture. However, the region has minimal options for livelihood as the land is not fertile which restricts local communities from practicing agriculture. Similarly, there are no other industries and job opportunities for the locals which makes Tourism the only profession of the local communities in the mountain. International Labour Organization (2022) states that tourism enterprises and livelihoods of the communities which were dependent on tourism were severely affected by the COVID-19. Therefore, it would be correct to say that the whole highland communities of

Nepal whose primary source of income was tourism were brutally affected by the pandemic and it was the communal resilience of the tourism workforce of the mountain which helped them survive during the tough phase of tourism during 2020 and 2021.

Literature review

The COVID-19 pandemic was an unprecedented viral pandemic which severely affected the lives and livelihoods of people and the global economy (Congressional Research Service, 2021). Scholars and scientists from all over the world are attempting to assess the impacts made by the pandemic. Since the study intends to explore community resilience, review of previous studies on similar areas was needed. To make a study scientific and stand on some established theories, one needs to review previous works and established theories relevant to the subject (Creswell, 2005). Therefore, reviews were done on different thematic topics and areas relevant to the subject.

Resilience

The terminology 'resilience' is believed to be first suggested by C.S. Holling in the 1930s in the field of ecology as he suggested it as a capacity to absorb changes and return to the normal state (Holling, 1973). Resilience can be defined as an ability to encounter and survive adverse circumstances. To be more specific, resilience has been defined as "the capacity of a system to absorb disturbance and reorganize while changing so as to still retain essentially the same function, structure, identity and feedback" (Walker et al, 2004 as cited in Cochrane, 2010). Intergovernmental Panel on Climate Change (IPCC) defines resilience as, "The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions" (IPCC, 2012). Similarly, while referring community resilience, we need to consider the combination of adaptability and innovation which enhance a system's general capacities to absorb internal (e.g., social inequality, political turmoil) and external (e.g., global economic shifts, hurricanes) shocks (Hahn & Nykvist, 2017; Smit & Wandel, 2006, as cited in Holladay, 2018).

Tourism resilience

"Resilience of a tourism business is the organizational capacity to withstand, adapt, and recover from disaster" (Prayag et al., (2014) as cited in Victoria University, 2021). The tourism destination and system do not function in vacuum as it is shaped by actions of multiple actors (Victoria University, 2021). In other words, Cochrane (2010) suggests the definition of resilience which could be linked well while referring to tourism resilience as a linkage of human and environmental processes and thus can be regarded as a framework for understanding world systems, as tourism is often a system which consists of the different micro, macro and mega environment. Cochrane (2010) further states the basic principles of the resilience concept as a cycle or loop, not a linear trend where each stage is not necessarily identical. Here stages mean event(s), and adaptive capacity which depends on the vulnerability and sensitivity of the systems. Tourism resilience can be seen as an outcome of the vulnerability of the industry to the phenomenon, turbulence/disequilibrium, adaptive capacity and co-evolution (Stevenson et al., 2009).

Nepal's tourism and mountain community

Nepal's tourism is associated with the mountain not only today but since its inception. The country was a wonderland till the 1930s as it was not open to all (Mahato et al., 2021) Nepal welcomed only a few during the Rana regime before the 1900s. Mahato et al., (2021) state, "In 1949, the Ranas decided to allow mountaineers to explore as long as scientists accompanied them" (Mahato et al., 2021). Nepal was popular for hunting and adventures during that period. However, different foreigners visited Nepal in their thirst to conquer the Himalayas. In this line, in the late 1920s, the British expedition team attempted to summit Mt. Everest. Further, Nepal gradually started to get open to foreigners in the 1950s and was popular as a destination for mountaineers. Moreover, trekking tourism became popular among adventure seekers around the world and Nepal has the major components of trekking tourism destination like difficult terrain, need of special clothes, unexplored region and communities (Rozycki & Dryglas, 2014) which make Nepal a potential favorite destination for trekking tourism.

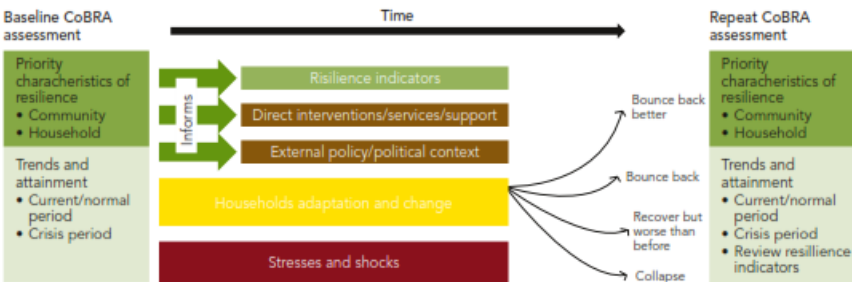
Before the 1920s, when tourism was not an occupation in the mountain region, people of the mountain region used to migrate to different places in India and Tibet for short-term employment (Grandon, 2007). It was when the mountain region was not able to discover opportunities in tourism. Word of mouth has become an effective tool in developing Nepal's tourism (Thapa, 2010). Different scholars like Mahato et al., (2020); Thapa (2010) while sharing the history of Nepal's Tourism state that there has been a shift of tourism trend in Nepal. The trend before 1950 was limited to few as the country was not open to all; post 1950 the country was in the news after the successful Everest summit by Sir Edmund Hillary and Tenzing Norgay and trekking and mountaineering has been a popular activity in Nepal.

Theory of resilience

Though the theory of resilience was mainly directed to ecological perspectives only when it was first proposed by Holling (1973), it is also applicable to tourism and its community. Further, Holling (1973) describing the resilience framework states, "The Resilience Framework can accommodate the shift of perspective, for it does not require a precise capacity to predict the future, but only a qualitative capacity to devise systems that can absorb and accommodate future events in whatever unexpected forms they may take" (p. 21). This statement can be taken for reference while analyzing the resilience of the mountain community to analyze its capacity to accommodate the shocks COVID-19 brought.

Figure 1

CoBRA Model



Note: UNDP, 2014

Similarly, the Community Based Resilience Analysis (CoBRA) framework suggested by UNDP (2014) as one of the practical analytical tools to assess community resilience, is also relevant to analyze the resilience of the mountain tourism community of Nepal as it has identified indicators of community resilience (UNDP, 2014).

Referring to this model, community resilience can be assessed based on indicators such as trends and attainment. Similarly, Deutsches Komitee Katastrophenvorsorge e. V (2022) defines destination resilience as the "overall ability of people in a tourism destination (e.g., service providers, institutions, organisations) to deal with different risks while maintaining an acceptable level of functioning of the tourism system without compromising long-term prospects for sustainable development." (DKKV, 2022). And this can be reflected well in the data of the Sagarmatha and Annapurna regions.

Figure 2

Destination Resilience



Note: DKKV, 2022

Global tourism resilience in COVID

The tourism industry is one of the top global industries. Globally, it contributed USD 9630 billion to the global GDP where one out of ten jobs was said to be generated by the Travel & Tourism Industries in 2019 (WTTC, 2022). UNWTO (2021) states that there was a decline of more than 80% in the number of international arrivals from January 2020 to January 2021. With a drop of more than 64% in the global tourism industry (UNWTO, 2021), it affected tourism destinations and their stakeholders including local tourism trade. The figure 2 itself shows that the global tourism industry as anticipated was one of the most vulnerable industries during the pandemic, and that was also anticipated to be with low resilience.

The global tourism industry is recovering, actually recovering faster than projected by different researchers (UNWTO, 2022). The increment in the number of international arrivals is promising. If we look at the arrival number of the tourists, the global tourism proved to be more resilient than what was thought

Nepal's tourism resilience

Nepal's tourism industry's resilience can be defined from the perspective of socio-ecological resilience. While defining Nepal's tourism resilience, it could be defined from the socio-ecological lens referring to scholars like Berkes & Folke (1998), Tyrrell & Johnston, (2008), Holladay & Powell, (2013) and Holladay (2018) where the tourism industry can be regarded as socio-ecological system as it is a blend of humans in nature. In this line, the Socio-Ecological Science concept as suggested by Folke et al., (2010), defines resilience as a capacity to be tolerant to the changes and maintain structure and function.

Tourism industry is one of the most fragile and vulnerable sectors when it comes to restrictions on the mobility of travelers. Even negative news affects a destination's tourism as tourists tend to change, cancel or postpone their travel plans (Bhatta, Gautam, & Tanaka, 2022). This ultimately affects the communities and sectors which solely depend on tourism. For instance: the communities of the mountains of Nepal which are solely dependent on tourism for the economy got severely affected by the lockdown and mobility restrictions due to the pandemic. It was anticipated that many communities would change their profession and there would be a brain-drain of tourism professionals in the mountain. However, circumstances are different. The paper attempts to assess the circumstance referring to the theories of resilience. In the paper, Nepal's tourism is assessed on the base of the same framework shown in figure 2. Further, in the paper, tourism resilience has been considered as a community resilience here, tourism resilience is assessed considering the degree of adaptability of mountain communities of Nepal whose livelihoods are solely dependent on tourism. So, community resilience, here, is the community's capacity to identify needs as they evolve and apply for necessary resources to address these needs (Jewett et al., 2021).

Since the study tries to explore and assess the communal resilience of the tourism community of the mountains of Nepal, it is important to know about the shared or common factors of the study units and to study shared human context, one shall prefer qualitative research methodology (Creswell, 1994). Therefore, qualitative research methodology was used. Further, the secondary data were taken in reference for the analysis of the status before, during, and after the lockdown of the area. Similarly, to discuss the actions and activities of the community, qualitative data were collected and analyzed.

The data were collected from both primary and secondary sources including the tourism statistics of the Government of Nepal, the Nepal Tourism Board, the Ministry, National parks and the Sustainable Tourism Livelihood Project (NTB/UNDP Project). Similarly, primary sources were interviews, observations, Key Informants Interviews (KII) and Focus Group Discussions (FGD).

The researcher visited the tourism sites where informal workers were engaged in cleaning the destination. It was observed that the destinations were clean and more beautiful than before and the community people were engaged in such works.

Research area

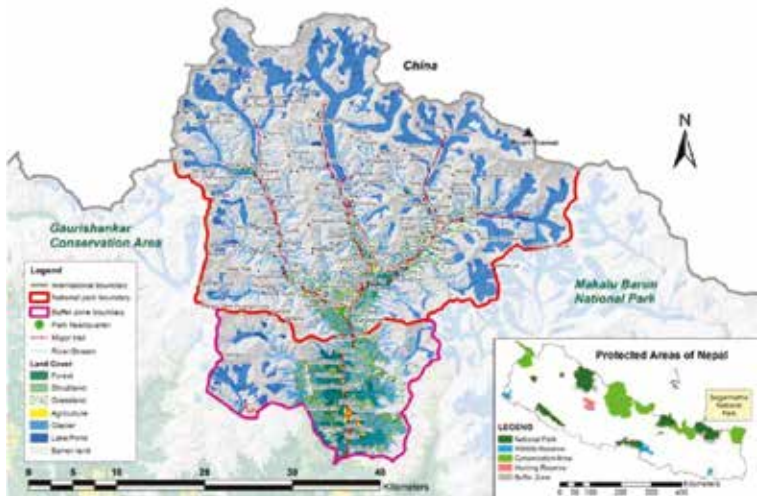
The study sites of the research are Sagarmatha National Park region and Annapurna Conservation Area. These two protected areas which are in the mountain region are the areas which witness the highest number of arrival of tourists (GoN, 2019).

Sagarmatha National Park is a national park in the eastern Nepal with an area of 1148 square

kilometres and is home to Mount Everest, the highest peak in the world. It is listed in the UNESCO World Heritage sites for its rich biological and geographical diversity. The total population of the national park and buffer zone is 7745 with 1619 households (SNP, 2022). The major ethnic group of the area is Sherpa whose major occupation is tourism and related trade.

Figure 3

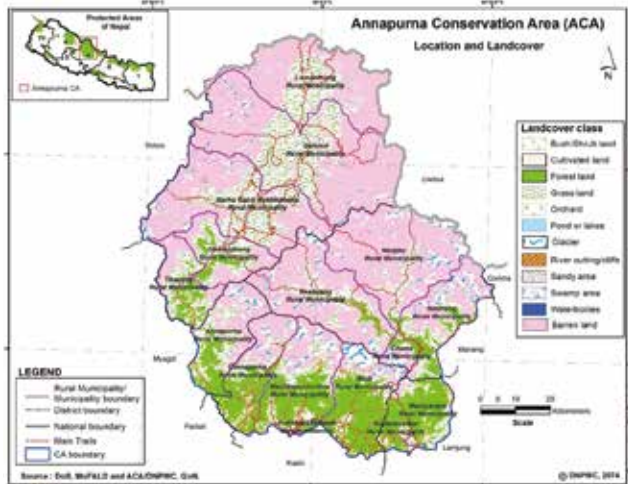
Sagarmatha National Park



Annapurna Conservation Area is a protected area established in 1992 AD. It covers an area of 7629 square kilometres and encompasses the Annapurna Himalayan range in western Nepal. It is a home to more than one million people who are involved in agriculture and tourism as their major occupation (GoN, 2022).

Figure 4

Map of Annapurna Conservation Area



Note: GoN, 2022

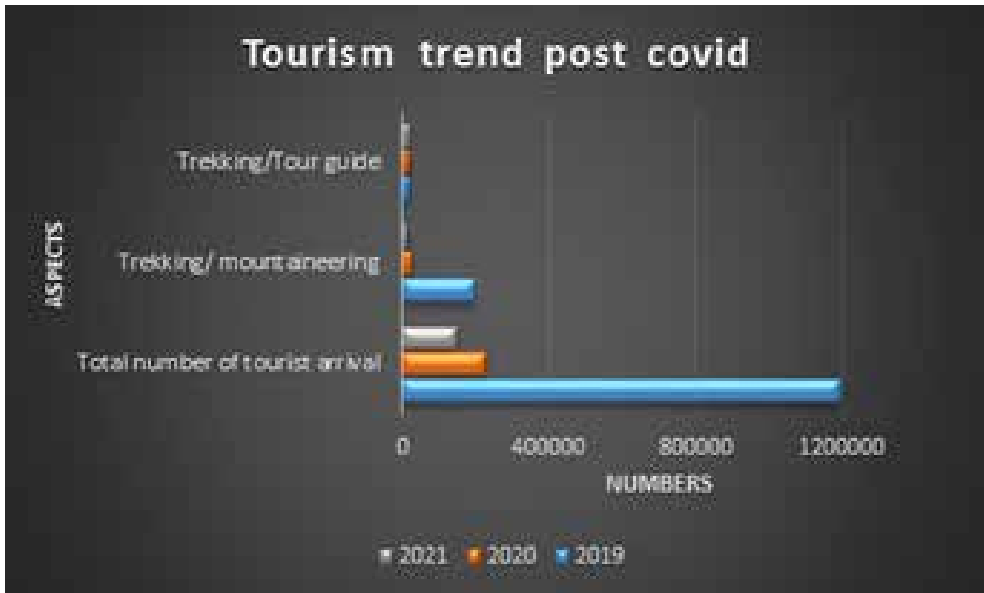
Findings and discussion

The collected data were transcribed and analyzed. Data from different secondary sources were collected and analyzed. Further, data from primary sources were transcribed and verified with other sources before drawing the conclusion and reach to the results.

While analyzing the data from tourism statistics provided by the Ministry of Culture, Tourism and Civil Aviation, it was found that the number of registered tour and trekking guides were increasing even after the COVID. The concerned ministry has published the data upto 2021 which show the increasing trend. From the figure below, the total number of trekking and tour guides increased each year amidst the lockdown. This can be linked with the first research question. Edeh, Ugboego and Adama (2020) in their research about the human resource and organizational resilience found that capacity building of human resource would enhance adaptive capacity of the organization from the foregoing, upskilling human resource would not just improve the skills of the employees but would enhance the adaptive capacity of the organisation. The increase in the number of guides shows that the tourism industry has improved skills which in a way can be linked with the first research question as DKKV (2022) suggests one of the domains of community resilience as the enhancement in capacity.

Figure 5

Tourism trend vs mountain tourism professionals (registered guides)



Community itself as the strongest capacity

There were not any specific vulnerability and capacity assessments conducted before in the regions with a special focus on the tourism industry. Reports of GoN about disaster and crisis management state Nepal's tourism as a fragile industry as it is highly vulnerable to different natural and anthropogenic crises. In the case of mountains, there are frequent cases of avalanches, Glacier lake outburst floods, rockfall, and landslides (GoN, 2022). If we look at different incidents, the major vulnerability of the Annapurna and Sagarmatha region is

towards avalanches and glacier-related risks. On the other hand, if we analyze the response made by the local people against the handbook of Climate Vulnerability and Capacity Analysis (CARE, 2019), we can consider that community itself as the strongest capacity of the region.

Nepal is vulnerable to different hazards due to its geography and poor economy and, therefore, Nepal is not new to crisis as numerous cases of disasters are recorded annually. The major crisis Nepal faced and that impacted Nepal's tourism was during the insurgency period and the disastrous earthquake of 2015. Mr. Deepak Raj Joshi, former CEO of the national tourism organization, shares his experience of managing the crisis, "The earthquake caused loss of lives and infrastructures, moreover it caused loss of confidence of travelers to Nepal. However, the community came together for the rescue, response and bounce back programs instantly which made it possible to overcome shortly". On a similar note, Dr. Dhananjay Regmi, CEO of NTB who is a glaciologist and environmentalist, shares his experience of evacuating stranded tourists during the first phase of lockdown. He states, "the whole tourism fraternity came together to work on the rescue. From hoteliers to aviation, from local leaders to guides, all came and worked day and night to ensure that visitors reached their homes safely". Similarly, during the pilot project of Nepal Tourism Board and United Nations Development Programme while analyzing the situation with stakeholders, the community itself identified the most vulnerable and involved them in a cash for work program. This shows the communal feeling among the tourism community of mountains.

Tough times are the part of mountain communities as they have been living in hardship for long time. The communities are adapted to different complexities. Wyss et al., (2022) share in their research that the communities have a history of cultural inspiration and retreat that trigger social and technical adaptation. During the FGD the local lodge owners in Khumbu region shared that the Sherpas work as a community and usually tea houses operated above 4000 metres are solely owned and run by them. The owners happen to be relatives to each other. Further, it was stated that the kinship among the owners balances everything. People traveling above cannot even communicate for hotel booking and meals if hotels of lower altitude do not inform ahead as there is low chance of telecommunication. Analysing all these, it might not be wrong to state that the communal feeling of the community is the main capacity of Nepal's tourism. When we analyze this with the theory of community-based resilience, we can draw an answer to the first research question that community is the major capacity which helps minimize other vulnerabilities in Nepal's tourism.

Crisis as an opportunity

When the government announced the lockdown restricting people's mobility from March 31, 2020, the operation of the tourism industry was impossible. Many hotels and properties were shut down due to the lockdown. Online Khabar (2021) states that more than 17 percent of hotels were shut down in Nepal during the pandemic. However, the mountain tourism community of the study area utilized the time in preparedness. During the pandemic, different local, national and international humanitarian agencies also worked in the rescue and recovery projects. For instance, in Annapurna and Everest region which are the mountain protected areas with highest number of arrivals of the tourists, a short-term employment program run by NTB and UNDP in partnership with local governments provided jobs for the most vulnerable tourism workforce (NTB, 2021). During that time, those workforces worked on disaster preparedness as they reconstructed trekking trails, re-engineered the trails and

worked on other aspects of solid waste management. The theory of community resilience's special focus is on the community's preparedness for disasters and in this line, we can say that the mountain tourism community strengthened their resilience during COVID not only against COVID but also against other disasters which can be related to aspects of community resilience shared by Ghapar, Otham and Jamal (2014) as it refers to the capacity to cope with stress and overcome the adversity. This answers the first research question.

Different tourism professional associations were also working in beautification and upgrading of the tourism products during the pandemic period. During the FGD with the members of Gandaki Trekking Agencies Association of Nepal (TAAN), the participants stated that the trekking professionals including agencies operators and guides were interested in contributing voluntarily in upgrading of the trekking trails. For instance: Mr. Udaya Subedi, treasurer of Gandaki TAAN shared that tourism professionals started participating in waste collection and management around the Fewa lake during the pandemic. These all show that tourism fraternity members were involved in upgrading tourism products which also helped them cope with the stress brought by lack of businesses.

Collaboration: a key to building resilience

DKKV (2022) suggests social networks as one of the major components of destination resilience, and in the case of the study area, these networks which were later capitalized by collaboration were very crucial for community resilience. Different actors of the tourism industry collaborated to overcome the impacts of the COVID crisis and worked on coping with the impacts. For instance, NTB, UNDP, local rural municipalities, and different professional associations of the tourism trade of Nepal collaborated to implement "Immediate livelihood support program for most vulnerable tourism workforce" which was implemented in different tourist destinations of Nepal including both Annapurna and Sagarmatha region. 80 needy and most vulnerable tourism workforce engaged in different activities which would add value to the tourist destinations in Annapurna and Sagarmatha region (NTB, 2020). For the project, NTB and UNDP collaborated with different local governments, tourism professional associations and other informal groups in tourism. Lastly, these collaborative efforts showed the results as they helped retain the informal tourism workforce during the crisis which is one of the major indicators of tourism resilience of a destination. This might not be the only reason that the number of trekking guides remained in increasing trend despite the pandemic, however, the initiation helped the most vulnerable ones who were likely to leave the profession.

The COVID period was longer than anyone anticipated, and the capacity to absorb the shocks such as an unexpected crisis is resilience. For resilience, joint efforts are a must. Realizing that, the Pilot project was followed by a full-fledged project "Sustainable Tourism Livelihood Recovery Project". In total, 208 informal tourism workers in Annapurna and 268 in the Sagarmatha region were provided short-term jobs which also helped retain the human resources of mountain tourism. There are many projects which were implemented in joint collaboration of different stakeholders which helped in resilience. The World Bank also worked with the Board to build a Crisis Communication Plan as shared by the CEO during an interview. Further, he stated that different stakeholders were ready to collaborate for a tourism recovery project which helped the industry absorb the shock.

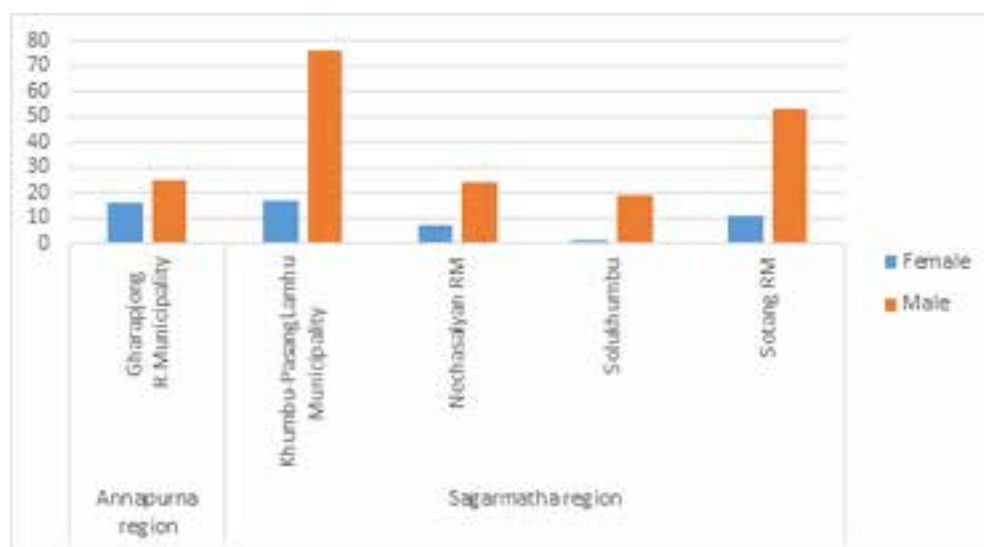
During the FGD with the tourism professional association in Pokhara, it was shared that

collaboration of different stakeholders were readily seen instantly after the lockdown. The NTB, embassies, ministries, Province Government, the Ministry of Home Affairs, Pokhara Tourism Council, Gandaki TAAN, hotels, restaurants all worked together to rescue stranded tourists in Nepal once the lockdown was announced. One of the hotel owners of Pokhara shared that hotels and restaurants of Pokhara even provided meals free of cost. The Chairperson of the tourism council during the interview shared that the pandemic demonstrated the real collaboration among the stakeholders and we were confident that we can overcome this crisis.

Analyzing the interviews and the FGDs, it can be concluded that collaboration was key to fight the crisis and collaboration worked as a catalyst to ensure the resilience of the community.

Figure 6

Chart depicting several tourism professionals



Note: Short-term jobs were provided by Sustainable Tourism Livelihood Recovery Project in Sagarmatha and Annapurna region.

The tourism fraternity received support from the government as well. The federal government of Nepal even provisioned soft loans and 25% of the wages as a relief to the workforce and social welfare fund for the tourism industry (Shivakoti, 2021). These all collaborations and initiations of different stakeholders complimented the resilience of the tourism community.

Status quo as a strength

In the time of COVID, numerous businesses were shut down. The tourism and hospitality sectors were highly affected as even renowned businesses discontinued their operations (Online Khabar, 2021). The COVID pandemic was unprecedented and no businesses and communities were prepared for that. Therefore, the major trait that kept businesses running was not preparedness for crisis but resilience. In the case of mountain tourism in Nepal where people did not have any other alternatives to their livelihood (Dahal, 2023), the community tried to keep the industry as it is by giving different local tasks.

Tourism is the game-changer in the mountain region. Before tourism, mountain communities were fully dependent on seasonal agriculture which also was merely subsistence farming. One of the interviewees, Mr. Pasang Sherpa, a local guide and leader of Sagarmatha region stated that before tourism, there were no opportunities in the region as the topography is tough and unfriendly for commercial farming of cash crops, and lack of infrastructures always kept them backwards, however, tourism changed everything. Now even small children are good at communication, speak English and have got exposure. This statement depicts that tourism has been a crucial part of mountain communities' lives.

Mountain communities did not explore other opportunities than tourism which in a way helped them become resilient. “There is no option than being resilient as we do not have other options”, states Mr. Sherpa. This sentiment of people and the status quo the region has been holding with are major reasons for the resilience. This also addresses the first research question.

Communal sentiments and values as drivers

Community resilience is an integral part of crisis management, specifically in the field of public emergency management (Admad et al., 2022). In the case of COVID which was one of the biggest global public emergencies, community resilience was the key to overcoming the shock. Here, community resilience encompasses physical and psychological health, social and economic equity and well-being, effective governmental and non-governmental actors and social connectedness (Chandra et al., 2013 as cited in Admad et al., 2022).

There are many challenges for resilience and tourism raises some particular ones (Goodwin, 2017). The resilience of tourism is often determined by the sense of responsibility of the tourism industry or trade. In the case of the study area, during the COVID, it was found from the interview of the leaders of the tourism workforce that the tourism communities were out of jobs, however, they were committed to working for preparedness for the future. Different local bodies of the region provided short-term employment for the tourism workforce as well. For instance, NTB and UNDP collaborated on an immediate livelihood support program for the most vulnerable tourism workforce and provided jobs to the informal tourism workforce. During that project, the organizations partnered with local rural municipalities to identify and provide jobs to the most vulnerable workforce (NTB, 2021).

The tourism communities who were out of jobs during the lockdown were ready to voluntarily contribute as well. “We were out of work for more than six months since the lockdown and out of work means we were almost out of food as well. This project provided us with the work of our sector and we are being paid for what we were supposed to do voluntarily as well: cleaning the routes/ maintenance of the trail,” said Mr Narayan Sunar, one of the workers of the project. The statements of Mr. Sunar depict all the components of community resilience and the theory of resilience is in line with the scenario he has described. Therefore, it can be concluded that communal feelings, sentiments of community to others, empathy and collaboration were crucial to minimizing the impacts of the COVID in the mountain tourism community.

Implications of the study

The major strength of mountain tourism in Nepal is not only the mountains but the people and community. These communities' hospitality ultimately have helped the country become

a favorite destination for mountain tourism. Having mentioned this, the implications of the study are discussed below.

Capacity building of the community: a must for resilience

Community feelings and collaboration were found to be the major drivers of overcoming the shocks of the pandemic in mountain tourism. Therefore, capacity building of the community is a must to ensure better preparedness and effective responses during a crisis.

Sustainable collaborations for resilience building

Collaboration of different institutions and bodies proved to be very crucial during the fight against the COVID pandemic. The mountain tourism community collaborated with different stakeholders to ensure the community's resilience. Therefore, the study suggests that there should be long-term and sustainable collaborations among different stakeholders for resilience building.

Conclusion

Tourism is one of the most fragile industries as it gets affected by anything that affects people's mobility and decision-making. Amidst the uncertainties and unpredictable circumstances the earth has been experiencing in the form of climate change, the world encountered another dangerous threat in the form of COVID 19 which was instantly declared as a global pandemic and the whole world went on to lockdown. Consequently, the restriction on people's mobility posed a serious threat to global tourism. Nepal's economy was hit hard and the tourism industry suffered the most serious threat to the community's dependence on the tourism industry. The mountain communities which are dependent on tourism and its multiple impacts were supposed to be severely affected. The study revealed that although they were affected, their community resilience was built due to collaborative actions, communal feelings and feelings of responsibility helped them overcome the shocks and threats posed by the pandemic. The level of their resilience and the time frame the shocks could be absorbed and the learnings they perceived from the pandemic are the areas of further study.

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Conflict of interest

The author, hereby, declares no conflict of interest.

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