

An Economic Impact Analysis of the Covid-19 Pandemic in the Nepalese Tourism Sector

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Abstract

Background: A considerable number of studies in the Nepalese context have revealed that Nepal's tourism sector has been adversely affected by the Covid-19 pandemic; however, none of these studies have quantified these consequences in monetary terms. This assessment is expected to offer valuable insight for enhancing the resilience of tourism sector to future global disruptions and developing tailored policies to bolster the Nepalese tourism sector against external shocks.

Objectives: This study addresses a critical gap in understanding the full economic ramifications of the Covid-19 pandemic in the Nepalese tourism sector by quantifying the primary, secondary and tertiary revenue losses. By providing a comprehensive assessment of the pandemic's impact, this study aims to inform policymakers and industry stakeholders in developing tailored strategies for recovery and resilience.

Methods: Secondary data are used in this study. It employs Stynes et al.'s (2000) revised money generation framework and the Keynesian macroeconomic multiplier approach to assess the actual and expected economic impacts of tourism activities in Nepal during the pandemic periods of 2020 and 2021. The actual value is determined using the actual tourism statistics, while the expected value is based on the targeted tourism statistics reported by the Ministry of Culture, Tourism, and Civil Aviation, Nepal. The difference between the two estimates is attributed to the economic impact of the Covid-19 pandemic in those years.

Results: This study reveals an expected revenue decrease of 1.038 billion US dollars in 2020 and 1.309 billion US dollars in 2021. In addition, the tourism multiplier values are declining in Nepal over the observed years.

Conclusion: This study provides two key conclusions. First, the Nepalese tourism sector is susceptible to travel restrictions. Second, tourism revenue is being drained from the local economy due to the increasing importation of merchandise and services to satisfy the Nepalese tourism sector's demand.

Keywords: Covid-19, economic impact, sustainability, tourism, tourism multiplier

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Introduction

The tourism sector has long been acknowledged as a vital economic driver, significantly contributing to economic growth, employment, and foreign exchange earnings in numerous countries worldwide, including Nepal (Gautam, 2011). However, the Covid-19 pandemic has had profound impacts on the global economy, with the tourism sector being one of the hardest hit sectors. As a sector that relies heavily on the unrestricted cross-border movement of people, the tourism sector faced immediate shocks from lockdowns, travel restrictions, and health concerns associated with Covid-19, making the interplay between the pandemic and the tourism sector a prominent topic of research. The World Tourism Organization (2020) estimated a plunge of over 72 percent in international travel, resulting in a loss of more than 100 million direct tourism jobs and approximately 1.3 trillion US dollars in tourism revenue. According to a UN Tourism (2021) report, this impact on the tourism sector was over 11 times more severe than the impact recorded during the global financial crisis period of 2007-09.

Nepal has also suffered severe consequences from this disruption. The arrival of the pandemic in early 2020 brought the tourism sector to a screeching halt. Consequently, the number of international tourists to Nepal fell by over 80 percent by 2020, as reported by the Ministry of Culture, Tourism and Civil Aviation (2022). A panel survey conducted by the Nepal Rastra Bank (2020, 2021) revealed that the hotel and restaurant industry was one of the most affected industries after travel restrictions were enforced in Nepal from March to June 2020. Specifically, the size of the business shrank to as low as 7 percent, and over 40 percent of the staff were laid off during the lockdown. Meanwhile, the Nepal Rastra Bank (2022) reported an 89 percent decline in the Nepalese tourism sector's contributions to the country's foreign reserves in 2020, and a 72 percent decline in 2021 as compared to 2019.

The World Travel and Tourism Council (2019, 2022) reported a decline of 43 percent in the Nepalese tourism sector's contributions to the country's gross domestic product (GDP) and a loss of 11 percent in employment generation. The World Tourism Organization (2020) reported a revenue loss of 428 million US dollars in the Nepalese tourism sector in 2020 due to the Covid-19 pandemic.

The above-mentioned estimates only consider the primary (or direct) revenue losses and fail to consider the secondary (or indirect) and tertiary (or induced) revenue losses from tourism activities. In fact, visitors contribute directly to businesses, such as hotels, restaurants, airlines, and transportation, by purchasing their merchandise and services. These businesses then pay employees, who spend their earnings on other businesses' merchandise and services in the region and so on resulting in a chain of effects that makes a larger contribution to the economy than the reported direct revenue value. According to Weaver (2006), total revenue from indirect and induced sources can often double that of direct revenue. Consequently, the contribution loss of the Nepalese tourism sector was greater than the USD 428 million reported by the World Tourism Organization (2020).

Unfortunately, Nepal's policymakers and tourism stakeholders do not comprehend the full extent of this cumulative revenue loss due to the Covid-19 pandemic, as no study has yet been conducted on this subject in Nepal. This study is an initial work to measure the economic impacts of tourism in Nepal and assess overall economic consequences of the Covid-19 pandemic on the Nepalese tourism sector in particular, including the primary, secondary, and tertiary activities. By quantifying the cumulative value loss incurred, this study holds significance in developing tailored policies to bolster the Nepalese tourism sector. In

addition, the findings can provide valuable lessons for enhancing the resilience of tourism sector to future global disruptions.

The remainder of this paper is organised as follows. The second section delivers a short review of potential approaches for estimating the economic impacts of tourism and of studies on the pandemic's impacts on tourism sector. The third section provides an overview of the research methods, data sources, and models employed in this study, succeeded by an exposition of the findings and discussion in section four. Finally, the paper concludes in the fifth section.

Review of Literature

Approaches of Economic Impact Analysis in Tourism

An economic impact analysis of tourism is an approach to estimate the accumulated value of the primary, secondary, and tertiary revenues generated by tourism activities in a particular region. One of the main challenges of this approach is estimating the secondary and tertiary value of tourism activities. Depending on the availability of details in tourism-related statistics, there are five major approaches, viz. the tourism satellite account (Blake et al., 2001), the revised money generation framework (Stynes et al., 2000), the Keynesian macroeconomic multiplier approach (Vaughan et al., 2000), the computable general equilibrium model (Adams & Parmenter, 1995), and the input-output analysis (Archer & Owen, 1971), which are suitable to estimate the secondary and tertiary revenue values of tourism activities. Nevertheless, these approaches differ significantly in their fundamental assumptions, structural frameworks, data requirements, and complexity.

A comprehensive comparison of these approaches was conducted by Chaudhary (2023) in his literature review, who concluded that the revised money generation framework of Stynes et al. (2000) is most suitable approach for the Nepalese context because of the simplicity of the available tourism statistics. This conclusion corresponds to the suggestions put forth by Kumar & Hussain (2014), who found that the money generation framework and computable general equilibrium model are appropriate approaches for measuring the economic impact of tourism. The authors additionally observed that these frameworks are widely employed in Australia, Canada, Britain and America to assess the economic impact of tourism.

The Covid-19 Pandemic's Impact on Tourism

Several studies have been conducted worldwide to examine the Covid-19 pandemic's impact on the tourism sector. For instance, Aduhene & Osei-Assibey (2021) estimated a tourism revenue loss of USD 171 million in Ghana over a three-month period. Lim & To (2022) concluded that the gambling industry in Macao experienced a significant decline during the same period. Campoy-Munoz et al. (2016) report similar findings in the cultural tourism in Spain. Deb et al. (2023), not only evaluated the pandemic's economic impact but also examined the psychological, educational and social effects in Bangladesh and India, finding negative outcomes. Loncaric et al. (2022), conducted a literature review and identified 33 studies that were published between March 2020 to March 2021, assessing the pandemic's impact on tourism. These studies varied in their research contexts, designs, and destinations; however, their findings regarding the impact of the pandemic were generally consistent.

Numerous studies in the Nepalese context have also examined the Covid-19 pandemic's effects in its tourism sector. Notable studies include those by Bhatta et al. (2022), Kunwar et al. (2022), Kunwar

(2021), Panthhe & Kokate (2021), Shivakoti (2021), Khanal (2020), and Ulak (2020). Bhatta et al. (2022) applied a probit regression to analyse the impact of factors such as age group, employment type, and travel companions on travel motivation in Nepal during the pandemic. By contrast, Kunwar et al. (2022), Kunwar (2021), Panthhe & Kokate (2021), and Khanal (2020) used a descriptive qualitative approach to study the pandemic's effects on the revenues of tourism industry, in particular, hospitality, catering, recreation, and transportation, and as expected, they found negative effects on these parameters. Shivakoti (2021) and Ulak (2020) also used a descriptive qualitative approach to examine the pandemic's impacts on the socioeconomic parameters of tourism and found negative effects. Thus, similar to many other parts of the globe, the Covid-19 pandemic caused negative economic consequences to Nepal too. However, these studies did not quantify the observed effects in monetary terms, which is filled in by this study.

Materials and Methods

Methods

This study employs Stynes et al. 's (2000) revised money generation framework to gauge the pandemic's economic consequences in the Nepalese tourism sector. This framework allows the calculation of two key figures related to the economic impact of tourism during the pandemic periods. The first figure is the realised value, which is based on reported tourism statistics, while the second is the expected value, which is based on the target tourism statistics set by the Ministry of Culture, Tourism, and Civil Aviation, Nepal. The difference between the two values for a given pandemic year is considered the tourism value loss attributable to the Covid-19 pandemic in that particular year. Since the tourism multiplier is a crucial element of the revised money generation model, and its value was not available for Nepal, this study uses the Keynesian macroeconomic multiplier approach to estimate the tourism multipliers for the pandemic periods and a few pre-pandemic periods. In addition, the study also utilises Spearman correlation analysis to assess the relationship between the number of international tourists to Nepal and Covid-19 cases, and travel restrictions index¹.

Study Period

This study spans over two years, viz. 2020 and 2021 which are considered pandemic periods. Economic parameters from these years have been frequently evaluated against those of 2019, a pre-pandemic benchmark year.

Sources of Data

The tourism-related data were obtained from the reports published by the Ministry of Culture, Tourism, and Civil Aviation, Nepal, while Covid-19 cases data and stringency index were obtained from the website of 'Our World in Data'. Additionally, the national accounts data were obtained from the national account reports published by the Central Bureau of Statistics (now the National Statistics Office), Nepal (2013, 2022).

Models

The Revised Money Generation Framework

The following equation (Eq. 1) illustrates the relationship between the number of international tourists to r effect of spendings in a specific region.

$$EIoT_t = [NTA_t * PCTS_t] * TM_t \quad (Eq. 1)$$

Here, EIoT signifies the 'economic impact of tourism,' NTA signifies the 'total number of international tourists,' PCTS signifies 'per capita tourist spending,' TM signifies the 'tourism multiplier,' and t indicates the year of analysis. This equation captures the primary revenue of tourism activities, with the product of NTA and PCTS. In contrast, the tourism multiplier accounts for the secondary and tertiary economic impact of tourism activities.

The Keynesian Macroeconomic Multiplier Approach

The Keynesian macroeconomic four-sector approach serves as the foundation for constructing the multiplier model, which is depicted as follows (Chaudhary 2023; Paudyal 2012).

$$Y = C + I + G + X - M \quad Eq. (2)$$

Here,

Y is gross domestic product and is an endogenous variable in this model.

$$C \text{ is consumption function and is expressed as } C = c_0 + c_1*(Y - T) \quad Eq. (3)$$

$$I \text{ is investment function and is expressed as } I = i_0 + i_1*r + i_2*Y(-1) \quad Eq. (4)$$

G is government spendings and X is total export value of merchandise and services. Both variables are exogeneous in this model.

$$T \text{ is taxes less subsidy's function and is expressed as } T = t_0 + t_1*Y \quad Eq. (5)$$

$$M \text{ is gross import of goods and services and is expressed as } M = m_0 + m_1*Y \quad Eq. (6)$$

r is the 91-day's treasury bill rates, a variable for short-term interest rate

The lowercase letters in Eqs. (3), (4), (5) and (6) represent the coefficient parameters of the respective equations.

To formulate an equation for the tourism multiplier using Eq. (2), the total export value of merchandise and services are separated into 'tourism revenue' (Tr) and 'residual export value of merchandise and services' (\underline{X}), resulting in $X = (\underline{X} + Tr)$. Consequently, Eq. (2) can be restated as follows:

$$Y = C + I + G + (\underline{X} + Tr) - M \quad Eq. (7)$$

When Eqs. (3), (4), (5), and (6) are substituted into Eq. (7) and solving for the tourism multiplier, the following equation is obtained:

$$TM = \frac{1}{1 - c_1*(1 - t_1) + m_1} = \frac{1}{1 - MPC*(1 - MPT) + MPM} \quad Eq. (8)$$

Here, MPC signifies the 'marginal propensity to consume,' MPT signifies the 'marginal propensity to tax,' and MPM signifies the 'marginal propensity to import.' In this context, their empirical values were estimated using the three-stage least square (3SLS) approach in the system equations. In this system, variables Y(-1), G, Tr, \underline{X} and r are treated as instrument variables. The estimation process used the Eviews (version 12) software.

Result and Discussion

Result

The Covid-19 pandemic has had a limited effect on tourism multipliers, which remained relatively stable

at 1.68 and 1.65 in 2020 and 2021 respectively, compared to 1.67 in 2019, and the per capita tourist spending during the pandemic period was also higher, at 981 US dollars and 744 US dollars respectively. However, the drop in tourist arrivals has caused a significant decrease in the economic impact of tourism. Without pandemic, Nepal would have welcomed at least 1.34 and 1.54 million international tourists in 2020 and 2021 respectively (Ministry of Culture, Tourism and Civil Aviation, 2016) resulting in the economic impacts of 1.417 billion US dollars and 1.494 billion US dollars respectively from tourism sector alone. Unfortunately, the pandemic has led to travel restrictions being imposed for an extended period in Nepal and globally, resulting in an actual economic impact of 379 million US dollars in 2020 and 185 million US dollars in 2021. As a result, the Nepalese tourism sector has experienced a net loss in tourism revenue of 1.038 billion US dollars in 2020 and 1.309 billion US dollars in 2021 (Table 1 and Appendix A).

Table 1

The economic impact of tourism (EIoT) estimates in Nepal

EIoT values (USD million)	Pre-pandemic years		Pandemic years		Change (%)	
	2018	2019	2020	2021	2020/2019	2021/2019
Actual	1,011.24	1,218.77	379.39	185.32	-68.87	-84.79
Expected			1,417.19	1,494.10		
Loss in EIoT			1,037.80	1,308.78		

Source: Researcher's estimate.

Spearman correlation analysis² indicated a negative correlation between the number of tourist arrivals and both travel restrictions and Covid-19 reported cases. However, the correlation with travel restrictions ($\rho = -0.945$, $p\text{-value} = 0.000$) was stronger than that with Covid-19 cases ($\rho = -0.491$, $p\text{-value} = 0.004$, Table 2), suggesting that travel restrictions have been instrumental in deterring international tourists from visiting Nepal during the pandemic. This conclusion is supported by the sharp increase in international tourist arrivals in Nepal following the reopening of its borders in March 2022. Nepal surpassed the one million marks for tourist arrivals by 2023, as reported by Online Khabar (2023).

Table 2

Spearman correlation coefficients and their significance

January 2020 – August 2022)	No. of tourists	Covid-19 cases	Travel restrictions
No. of tourists	1	-0.491***	-0.945***
Covid-19 cases	-0.491***	1	0.486***
Travel restrictions	-0.945***	0.486***	1

Source: Researcher's estimate.

*Note: *** indicates that correlation is significant at 0.01 level (2-tailed).*

Discussion The results of this study emphasize two significant issues in the Nepalese tourism sector that warrant extensive discussion among policymakers and industry players for a sustainable approach to its economic impact.

The primary concern is the 'earning susceptibility' of the Nepalese tourism sector, which the Covid-19 pandemic has reiterated. The pandemic led to a 68 percent drop in the economic impact of tourism in

the first year and an 84 percent drop in the second year, demonstrating the Nepalese tourism sector's high dependence on tourism mobility. Researchers have reached similar conclusions in the past too. For instance, Upadhyaya et al. (2011) found that the Nepalese tourism sector is sensitive to mobility changes due to armed conflict, while Shrestha & Chaudhary (2014) discovered that general strikes in Nepal have a similar impact on the sector. Thapa-Parajuli & Paudel (2018) estimated a high elasticity (1.68) for total employment in the Nepalese tourism sector, further supporting this conclusion. In summary, any macro event that restricts people's movements, such as natural disasters, geopolitical tensions, political conflicts, or public health emergencies, will have devastating consequences for the Nepalese tourism sector in terms of both earnings and employment generation. Although the likelihood of these events occurring is low, their potential impact is high. Therefore, developing crisis management protocols and contingency plans will be highly effective in responding to these situations. In the medium to long-term, shifting the focus of Nepal's national tourism strategy from international to domestic tourism may help mitigate the impact of such idiosyncratic shocks.

The second issue is the declining value of tourism multipliers. The estimated value for 2021 is 1.65, which is higher than the average of 48 countries' tourism multipliers of 1.31, as reported by Ushakov & Andreeva (2021). However, compared with its historical trend in Nepal, there is a downward trend. Paudyal (2012) estimated its value of 1.97, while Chaudhary (2023) estimated its value of 1.93 for the year 2010. However, its value has depreciated by approximately 20 percent in the past decade in Nepal, indicating a rise in the importation of merchandise and services to satisfy the Nepalese tourism sector's demand. In other words, tourism revenue has been drained from the local economy. Therefore, policymakers must promote local sourcing and procurement, enhance community-based tourism activities, and promote agritourism to foster links between tourism and other sectors. By implementing these strategies, Nepal can increase the tourism multiplier effect, ensuring that the economic benefits of tourism are distributed widely throughout local communities and other sectors of the economy.

Conclusion and Suggestions

The study primarily aimed to quantify the cumulative monetary losses, including primary, secondary, and tertiary revenue losses, resulting from the Covid-19 pandemic in the Nepalese tourism sector, using the revised money generation framework of Stynes et al. (2000). The working of this framework was validated using the Keynesian macroeconomic multiplier approach in determining tourism multipliers. The interrelationship between the number of tourists to Nepal, Covid-19 cases, and travel restrictions was analysed using the Spearman's correlation test. The results of this study provided two key conclusions. First, the Nepalese tourism sector is susceptible to travel restrictions. Second, the country's economy does not fully benefit from tourism earnings, which limits its potential to promote broader economic growth and community empowerment.

As mentioned earlier, the Nepalese tourism sector is susceptible to external shocks, such as natural disasters, geopolitical tensions, political conflicts, and public health emergencies. To address this susceptibility effectively, policymakers in Nepal should take measures to develop robust crisis management protocols and contingency plans. Specifically, the following recommendations should be considered to achieve this goal: a) establishing clear communication channels, emergency response plans, and risk mitigation strategies; b) strengthening partnerships among industry stakeholders, including tourism boards, hotel associations, trekking agencies associations, and transportation associations of Nepal to coordinate efforts; c) providing

incentives to offer travellers greater flexibility in changing and cancelling reservations during crisis periods; d) offering financial assistance and tax incentives to support tourism businesses during crisis periods, and so on. In the medium to long-term, shifting the focus of the national tourism strategy from international to domestic tourism can help mitigate the impact of such idiosyncratic shocks.

The issue of declining tourism multipliers can be effectively addressed by focusing on strengthening the link between tourism sector and other sectors of the economy such as agriculture, manufacturing, and services. By promoting local sourcing and procurement, fostering community-based tourism initiatives, and investing in tourism-related infrastructure, the tourism multiplier can be enhanced, ensuring that economic benefits are distributed effectively throughout the local economy. Furthermore, adopting and promoting sustainable and responsible tourism practices are crucial for the long-term viability of this sector. However, to provide valuable insights and recommendations to policymakers and industry stakeholders in Nepal, future research should examine the pandemic's long-term impact on employment and income generation in tourism sector, identify factors contributing to the resilience or susceptibility of tourism businesses, assess the effectiveness of government support measures and private sector initiatives in supporting the survival and recovery of tourism businesses, and develop strategies for sustainable recovery plans in the aftermath of crises.

In conclusion, while the tourism sector continues to face significant challenges, addressing its susceptibility and maximising its economic multiplier effect are imperative to unlock its full potential as a catalyst for inclusive and sustainable growth. The joint initiatives involving government bodies, local communities and industry stakeholders coupled with strategic investments and policy reforms play a crucial role in safeguarding the tourism sector's resilience and positive impact as the catalyst for inclusive and sustainable growth.

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Appendices

Appendix A

The economic impact of tourism (EIoT) estimates in Nepal

Year	Tourist arrivals	Length of stay (days)	Exp/tourist/day (USD)	Tourism multiplier	EIoT
					Value (USD)
2018	1,173,072	12.4	44	1.58	1,011,244,371
2019	1,197,191	12.7	48	1.67	1,218,778,748
2020	230,085	15.1	65	1.68	379,391,758
2021	150,962	15.5	48	1.65	185,320,951
2020 ^E	1,339,000	14.0	45	1.68	1,417,197,600
2021 ^E	1,540,000	14.0	42	1.65	1,494,108,000

Source: Ministry of Culture, Tourism, and Civil Aviation (2016, 2022) and the author's estimate.

Note: E = Expected value

Appendix B

The number of Covid-19 cases, Stringency index and Tourist arrivals, Nepal

Year	Month	Covid-19 cases	Stringency index	No. of tourists
2020	Jan	1	11.5	79702
2020	Feb	0	16.4	98190
2020	Mar	4	48.7	42776
2020	Apr	52	96.3	14
2020	May	1516	93.3	31
2020	Jun	11992	92.6	102
2020	Jul	6207	87.3	196
2020	Aug	19689	84.3	267
2020	Sep	38357	76.3	584
2020	Oct	92926	67.2	2025
2020	Nov	62709	63.0	1953
2020	Dec	27141	60.2	4245
2021	Jan	10366	59.1	8874
2021	Feb	3184	54.4	9146
2021	Mar	3166	30.4	14977
2021	Apr	45878	32.8	22450
2021	May	238115	94.8	1468
2021	Jun	77503	83.3	1143
2021	Jul	56584	60.6	2991
2021	Aug	67258	67.1	5917
2021	Sep	32414	52.3	9898
2021	Oct	17509	45.9	23284
2021	Nov	8796	53.9	26135
2021	Dec	7065	54.2	23550
2022	Jan	125482	59.3	16975
2022	Feb	23071	42.7	19766
2022	Mar	1442	28.1	42006
2022	Apr	384	25.9	58348
2022	May	330	25.6	53608
2022	Jun	554	25.3	46957
2022	Jul	6902	25.0	44462
2022	Aug	10750	24.4	41304

Source: *Our World in Data (n.d.) and Ministry of Culture, Tourism and Civil Aviation (2022)*