Exploring the Dynamics of Rural Tourism in Jammu and Kashmir: A Structural Equation Modelling Approach to Understanding Socio-Economic Impacts

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Introduction

Rural tourism has increasingly been recognised as a vital component of regional development strategies across the globe. In regions characterised by scenic landscapes and rich cultural heritages, such as Jammu and Kashmir, rural tourism not only offers a means of economic diversification but also promotes cultural preservation and environmental conservation (Prakash et al., 2016). This form of tourism provides an alternative to the mass tourism models that often lead to over tourism and environmental degradation, offering a sustainable approach that benefits both visitors and local communities (Jasrotia et al., 2022). Jammu and Kashmir, with its diverse geography that ranges from lush green valleys to rugged mountainous terrains, presents an ideal setting for exploring the dynamics of rural tourism. The state's unique cultural fabric, which includes a combination of various traditions, languages, and religious practices, adds further value to its tourism appeal (Jahan, 2022). However, despite these advantageous conditions, the full potential of rural tourism in the area has not been completely realized. Historical socio-political challenges, coupled with infrastructural deficits, have often overshadowed the opportunities that this sector can provide to the local populace (Majumder, 2017). The academic interest in rural tourism has been growing, as evidenced by numerous studies that have examined its socio-economic impacts on local communities in various contexts (Jangra et al., 2023). These studies have generally affirmed that well-managed rural tourism can lead to significant improvements in local employment, an increase in income levels, and the preservation of local cultures and traditions. However, the existing literature often lacks a detailed exploration of the interconnected factors that contribute to these outcomes, particularly in the context of regions like Jammu and Kashmir, where the socio-political backdrop adds layers of complexity to the tourism dynamics (Khan et al., 2020). In addition, although some studies have shed light on the positive aspects of rural tourism, very few have taken the time to thoroughly examine the difficulties encountered by this industry. Unaddressed problems include a lack of research on the effects of underinvestment in infrastructure, marketing, and social inclusion. In order for rural tourism to grow and have a positive impact on sustainable development, it is essential to have a firm grasp of these obstacles (Mir et al., 2022). This study aims to fill these gaps by employing a comprehensive structural equation modelling (SEM) approach to examine how tourist experiences influence their perceptions of local culture and the environment and how these perceptions affect the social and economic impacts on local communities (Kumar & Shekhar, 2020). Additionally, this research seeks to identify the challenges inherent in the rural tourism sector of Jammu and Kashmir and explore the opportunities for improvement. By integrating theories from tourism studies and sustainable development, this research constructs a model that links tourist experiences and perceptions with socio-economic outcomes and sectoral challenges. This model not only aids in understanding the direct and indirect effects of rural tourism on local communities but also provides a

framework for policymakers and stakeholders to identify leverage points for enhancing the benefits of rural tourism.

Research Problem

The rapid growth of rural tourism in Jammu and Kashmir has led to both positive and negative impacts on the socio-economic landscape of local communities. While rural tourism has the potential to drive economic growth and cultural preservation, it also poses challenges related to environmental degradation, cultural erosion, and social displacement. The research problem, therefore, centers on understanding the multifaceted socio-economic impacts of rural tourism in Jammu and Kashmir, focusing on how tourists' experiences and perceptions shape these impacts on local communities.

Objectives of the Study

The primary objective of this study is to explore the multifaceted impacts of rural tourism on the socio-economic fabric of local communities in Jammu and Kashmir. Specifically, the research aims to examine how tourists' experiences influence their perceptions of local culture and environmental preservation, and how these perceptions subsequently shape social and economic dynamics within rural communities. By assessing the extent to which tourists' experiences contribute to social changes, the study seeks to understand the social implications of tourism on local populations. Additionally, the research investigates the economic ramifications of tourists' perceptions, focusing on both the benefits and challenges these perceptions bring to local residents. Understanding the potential negative consequences of tourism, the study also aims to identify strategies for mitigating these challenges, thereby contributing to the sustainable development of rural tourism. Ultimately, this research endeavors to explore how the challenges faced in rural tourism can be leveraged to create opportunities for improvement, ensuring that tourism not only preserves but enhances the socio-economic well-being of local communities in Jammu and Kashmir.

Conceptual Framework

The conceptual framework for this study is rooted in understanding the intricate relationships between tourist experiences, perceptions of local culture and environment, and their socio-economic impacts on rural communities in Jammu and Kashmir. This framework is essential for dissecting the dynamics of rural tourism and identifying the underlying factors that contribute to both the positive and negative outcomes of tourism in these areas.

At the core of the framework is the **Tourist Experience (TE)**, which serves as a pivotal construct influencing other variables. This study posits that a positive tourist experience not only enhances the perception of local culture and environment but also contributes significantly to the social and economic well-being of the local community. The hypothesis suggests that when tourists have fulfilling and engaging experiences, they are more likely to develop favorable

perceptions of the local culture and environment, thereby fostering social cohesion and stimulating economic benefits for the community.

Perceptions of Local Culture and Environment (PCE) form the next crucial layer in the framework. These perceptions are shaped by the tourists' experiences and are hypothesized to have a dual impact: on the **Social Impact on the Local Community (SIC)** and the **Economic Impact on the Local Community (EIC)**. The study suggests that positive perceptions of culture and environment can bolster social cohesion by encouraging cultural exchange and social integration. Simultaneously, these perceptions can lead to increased economic activity, as tourists are more likely to engage in local economic activities, thereby benefiting the local economy.

The framework also incorporates the notion of **Challenges in Rural Tourism (CRT)**, which are influenced by the social and economic impacts of tourism. The study hypothesizes that the socio-economic benefits of tourism can mitigate some of the challenges faced by rural tourism, such as infrastructure deficiencies and marketing inadequacies. However, these challenges are also seen as opportunities for improvement, with the framework suggesting that understanding and addressing these challenges can lead to significant advancements in the sector.

Finally, the framework identifies **Opportunities for Improvement (OI)** as a critical outcome of recognizing and addressing the challenges in rural tourism. The study posits that by strategically tackling the challenges related to infrastructure, marketing, and social inclusion, stakeholders can enhance the overall sustainability and effectiveness of rural tourism, ensuring that it continues to benefit both the tourists and the local communities.

The conceptual framework of this study provides a comprehensive model that links tourist experiences and perceptions with socio-economic outcomes and sectoral challenges. It emphasizes the interconnectedness of these variables and highlights the importance of strategic management in enhancing the benefits of rural tourism while mitigating its challenges. This framework not only aids in understanding the direct and indirect effects of rural tourism on local communities but also serves as a valuable tool for policymakers and stakeholders in developing sustainable tourism strategies.

Review of Literature
Rural Tourism
(Chin et al., 2016) Findings from this research show that climate change, carrying capacity, and environmental education are three elements that greatly impact sustainable management and marketing initiatives, highlighting the significance of these initiatives in rural tourist locations. The community's backing is also crucial. (Prakash et al., 2016) Through the use of ten subindices and fifty-four indicators, this research endeavour assesses the quality of life (QoL) at the sub-national level in India. It does this by identifying clusters of districts that have a high quality of life, drawing

attention to the need for prioritising and policy interventions in order to realise the Sustainable Development Goals and enhance living circumstances. (Jaisingh, 2021) Within the context of India, this study investigates the relationship between the artisan sector and tourism, with a particular emphasis on the revitalization of traditional art and craft. From the point of view of visitors, it emphasises the significance of having a genuine shopping experience as well as the cultural history of India. In order to promote environmentally responsible tourist practices, the report recommends reviving artisan firms through the implementation of responsible supply chain arrangements and artisan entrepreneurship.

(Reddy et al., 2020) This study examines Northern Ireland's post-conflict tourism recovery and development, focusing on resilience and vulnerability. It finds that human dimensions, business flexibility, collaborative governance, and shared vision are critical for building resilience and reducing vulnerability. Promoting a diverse attraction base and ensuring safety and security are also important. The research contributes to tourism crisis management theory and practice.

(Kumar & Shekhar, 2020) The literature on the influence of technology on rural tourism is analysed in this research, with a particular emphasis on the socio-economic development of rural areas. It highlights trends and areas for improvement, highlighting the evolution of rural tourism and its potential to solve socioeconomic challenges.

(Jahan, 2022) There is a higher GI in Sikkim, and there is a greater species richness in subtropical forests, according to the findings of the study that investigates geodiversity in the Himalayan mountain systems, Jammu and Kashmir, and Sikkim.

(Jasrotia et al., 2022) Within the scope of this research, homestay practises in Uttarakhand, Himachal Pradesh, and Sikkim are investigated, with a particular emphasis on eco-friendly activities and the effects of sustainable tourism. This demonstrates the importance of homestay authorities having greater awareness and knowledge of the situation.

Socio-economic impact of rural tourism

(Imran & Nguyen, 2018) Even though the tourist sector in India has seen substantial growth, the families who participate in homestay programmes have not benefited economically from these programs. According to the findings of the research, which focuses on a hamlet in Uttarakhand, private business is widespread but has not yet reached its full potential. In order to aid in future undertakings, this research is being conducted.

(Khan et al., 2020) This study explores the uneven impact of high-quality institutions on attracting tourists to nations in the Asia-Pacific region. It establishes a threshold level at which the connection reverses, delivering useful policy insights for enhancing the regional institutional environment.

(Akram et al., 2021) An investigation of the connection between the growth of tourism and the advancement of socioeconomic conditions in Azad Jammu

and Kashmir, Pakistan, is the focus of this research. Based on social exchange theory, it verifies the stated hypothesis and adds to the literature on tourism and socio-economic growth in the state.

(Jana et al., 2022) Advances in Geographical and Environmental Sciences is a collection of publications that investigate several aspects of the planet's environment, such as the use of land, the urbanisation of land, the climate, the safety of food, the biodiversity of the earth, and the health of humans. For the purpose of addressing environmental concerns and developing a framework for sustainable development, it employs conventional field methods, remote sensing, and computer-aided modelling.

(Sun et al., 2022) Within the time frame of 2006–2018, this research analyses fourteen nations in East, South, and North Asia for their terrorism rates and the factors that contribute to their socioeconomic stratification. Due to population growth and education budget allocation, terrorist occurrences are greater in East and North Asia, whereas South Asia is most susceptible, according to the results.

(Jangra et al., 2023) The research finds that the poor state of National Highway-22 in Kinnaur is a hindrance to tourist growth, with Kalpa being seen as more desirable. The government needs to put money toward the growth of transportation.

(Li & Gou, 2023) The study's overarching goal is to learn what factors impact rural Chinese residents' opinions and attitudes about solar photovoltaic panels. Traditional landscapes are more beautiful, according to the results, but factors related to renewable energy, such as economic stakes and moral desirability, influence popular acceptance of panels.

(Showkat et al., 2024) This study explores the impact of digital financial services on women's financial independence in North India. It demonstrates a substantial positive association between the usage of these services and better financial decision-making, underscoring the potential of ICT in improving gender equality.

Rural Tourism in J&K

(Chauhan & Khanna, 2009) The role that tourism plays in fostering goodwill, understanding, and peace among different cultures is recognised by the United Nations World Tourism Organization. This study investigates the role that tourism plays in the process of peacebuilding in Kashmir and proposes a strategic model that is based on the relationships between guests and hosts.

(Majumder, 2017) For the purpose of understanding the Kashmir conflict, this study provides a critique of traditional approaches and suggests that class- and state-theoretical paradigms can add an additional layer of complexity. It argues that the new Kashmiri nationalist movement emerged from socio-economic circumstances rather than an inherent tendency. According to the findings of the research, the insurgency has been affected by state-sponsored securitization, which has resulted in the militarization of both internal politics and civil society.

(Sharma et al., 2017) The perspectives of graduating young people are the primary subject of this research project, which investigates the influence that special autonomy has on entrepreneurial endeavours in Jammu and Kashmir, India. There is not much of a difference between the sexes, but there is a greater awareness of difficulties and advantages among those who come from family business backgrounds. (Rashid et al., 2018) Herbal drinks (HDs) are a popular source of traditional medicine in the Azad Kashmir area, and this research delves into the taxonomic diversity and traditional knowledge of these plants. According to the results, the Asteraceae family included the most HD ingredients, but 73 plants from 40 other families and 66 genera were also used. The leaves, roots, and fruits of plants were the most often used components. This research shows how critical it is to keep medicinal HD species around for future generations.

(Baba et al., 2021) The study explores land-use shifts in Jammu and Kashmir, India, revealing an increasing trend towards undesirable ecological classes and a decline in desirable land-use, highlighting the need for sustainable management and conservation. (Choudhary et al., 2021) There are several different tribal tribes in Jammu and Kashmir, such as the Gujjars, Bakarwals, Gaddis, Sippi, Bot, and DardSheen. These communities contribute to India's rich cultural legacy and give the state its own distinct character.(Mir et al., 2022) In the 2019–20 research, the fisheries situation at Dal Lake was evaluated, and the results revealed significant levels of pollution and omnivorous fish predominating. Based on the findings of the research, it is recommended that sewage inflow and weed growth be controlled and that governance and management patterns be modified.

(Chaudhary et al., 2023) The behaviour of ski visitors in the Indian Himalayas is investigated in this research, with a particular emphasis on the Gulmarg resort. Despite the fact that sustainability is not a deciding factor, the findings indicate that choice variables have a good influence on satisfaction and loyalty.

Research Methodology
Selection of Study Area
The selection of Akhnoor, Ambaran, Gool, and Mandi as the focal points for this study on rural tourism in Jammu and Kashmir was driven by a combination of geographic, cultural, economic, and demographic factors that make these locations particularly suitable for examining the socio-economic impacts of rural tourism.
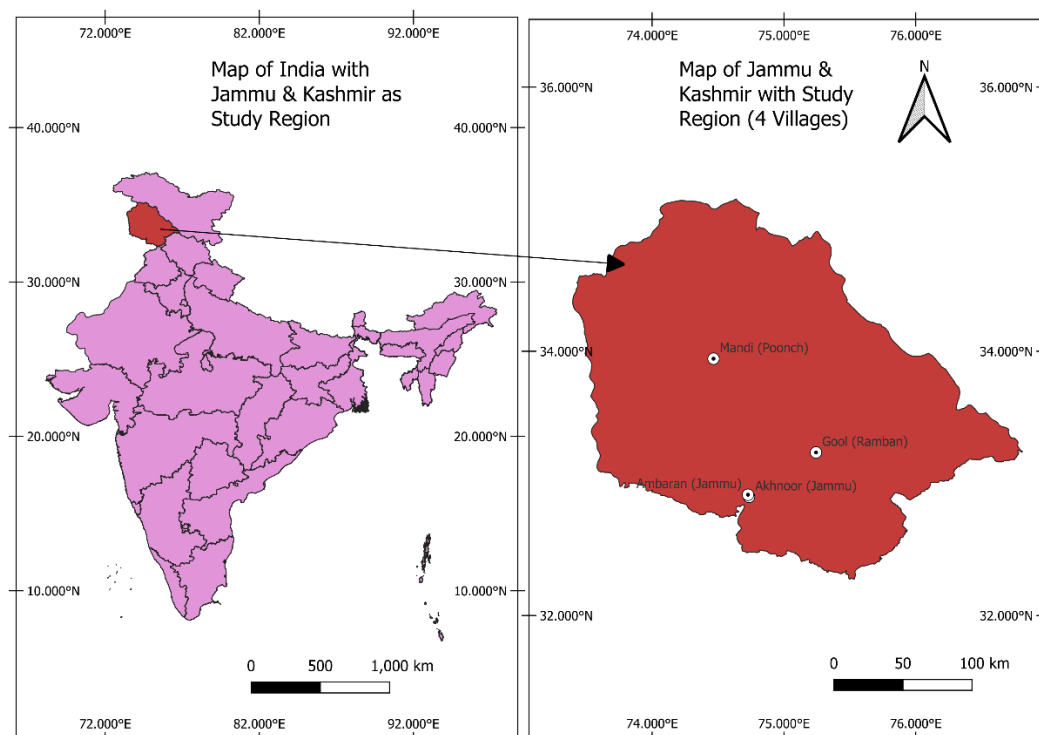
Fig1. Map of Study Region (Author Generated)

- **Geographic and Cultural Significance:** Each of these villages is situated in a district that boasts distinct geographic and cultural features attractive to tourists. Akhnoor is renowned for its archaeological sites and proximity to the Chenab River, enhancing its appeal as a rural tourism destination. Similarly, Ambaran is known for its historical Buddhist ruins, which provide a unique cultural and spiritual experience for visitors. Gool, nestled in the Ramban district, offers stunning landscapes and serves as a gateway to various trekking routes, making it an ideal location for eco-tourism and adventure tourism. Mandi, located in Poonch, is surrounded by lush greenery and features significant religious sites, which attract both domestic and international tourists seeking spiritual and serene experiences.
- **Economic and Developmental Context:** These villages represent a microcosm of the broader economic and developmental challenges and opportunities present in rural Kashmir (Jammu and Kashmir). The creation of jobs, improvements to infrastructure, and an overall uptick in spending are just a few ways that tourism has the ability to boost local economies. local spending. Understanding the dynamics of rural tourism in these areas can provide insights into how tourism can contribute to sustainable rural development and economic diversification.

- **Demographic Diversity:** The demographic composition of these villages offers a diverse base for studying the interaction between local communities and tourists. For instance, Akhnoor and Gool have relatively larger populations, with 1966 and 1817 households, respectively, representing significant community engagement potential in tourism activities. In contrast, Ambaran and Mandi, with 813 and 855 households, respectively, provide a more intimate setting for understanding the direct impacts of tourism on smaller communities.
- **Percentage of Households to Total Population:** The selection also considered the proportion of households in each village relative to their total population, which is indicative of community size and the potential scale of tourism impacts. Akhnoor, with the highest percentage (26.88%), and Gool (24.84%), are significant in size, suggesting a broader impact of tourism developments. Ambaran and Mandi, with smaller percentages (11.11% and 11.69%, respectively), allow for a focused examination of how tourism benefits and challenges manifest in less densely populated areas.
- The chosen villages, thus, not only exemplify the diverse range of rural tourism settings in Jammu and Kashmir but also encapsulate a variety of factors that can influence the outcomes of tourism.

Research Design and Framework

This study adopts a quantitative research approach to investigate the socio-economic impacts of rural tourism in Jammu and Kashmir. A cross-sectional survey design was employed to collect data from tourists visiting rural areas in the specified regions. The study framework was guided by the following hypotheses:

- H1: Tourist Experience (TE) positively affects Perceptions of Local Culture and Environment (PCE).
- H2: Tourist Experience (TE) positively affects Social Impact on Local Community (SIC).
- H3: Perceptions of Local Culture and Environment (PCE) positively affect Social Impact on Local Community (SIC).
- H4: Perceptions of Local Culture and Environment (PCE) positively affect Economic Impact on Local Community (EIC).
- H5: Social and Economic Impacts on Local Community (SIC & EIC) negatively affect Challenges in Rural Tourism (CRT).
- H6: Challenges in Rural Tourism (CRT) positively influence Opportunities for Improvement (OI).

Sample and Sampling Procedure

The sample for this study consists of tourists visiting rural areas within the Jammu district, specifically "Akhnoor and Ambaran villages, Ramban district (Gool village), and Poonch (Mandi village), as shown in figure 1. The sample size was determined using Taro Yamane's formula (1967), which provides a

simplified method for calculating sample sizes for surveys. The formula used is:

$$n = \frac{N}{1 + N(e)^2}$$

Where:
n= sample size required
N = number of people in the population
e = margin of error.

$$n = \frac{7312}{1 + 7312(0.05)^2}$$
$$n = 379.25$$

The optimal sample size 'n' turned out to be 379.25 and shall be considered as 380.

Data Collection Instrument
Data was collected using a structured questionnaire in the month of February and March 2024, which included both demographic questions and items designed to measure the constructs of Tourist Experience (TE), Perceptions of Local Culture and Environment (PCE), Social Impact on Local Community (SIC), Economic Impact on Local Community (EIC), Challenges in Rural Tourism (CRT), and Opportunities for Improvement (OI).

Statistical Analysis
Data collected from the survey were analysed using SPSS v27 for descriptive statistics, including frequencies, percentages, and means. Confirmatory Factor Analysis (CFA) was conducted using AMOS v24 to validate the measurement model and assess the reliability and validity of the latent constructs. Structural Equation Modeling (SEM) was employed to test the hypothesised relationships among variables and evaluate the overall fit of the model.

Reliability and Validity Tests
To ensure the reliability of the measurement scales, Cronbach's alpha was calculated for each construct, with all values exceeding the acceptable threshold of 0.7, indicating good internal consistency. Composite Reliability (CR)" and Average Variance Extracted (AVE) were also calculated to assess the convergent validity of the constructs, with all CR values above 0.7 and AVE values above 0.5, confirming the adequacy of the measurement model.

Confirmatory Factor Analysis (CFA)
Confirmatory factor analysis was performed using AMOS to assess the fit of the measurement model to the data. This analysis helped refine the scales by assessing the loading of individual items on their respective factors.

Reliability Analysis
Table 1. Reliability Analysis

Case Processing Summary		
		N
Cases	Valid	380
	Excluded[a]	0
	Total	380
Reliability Statistics		
Cronbach's Alpha		N of Items
0.949		21

According to Table 1, 380 answers were gathered and evaluated for the research. We included all of these legitimate situations in our research. The 21 items that made up the survey had a Cronbach's alpha score of 0.949, according to the section on reliability statistics. The high alpha value indicates that the questionnaire items are highly consistent with one another, above the generally recognised criterion of 0.7 for psychological scales.

Data Analysis
Table 2. Demographics

Variables		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	194	51.1	51.1	51.1
	Female	186	48.9	48.9	100.0
Age Group	18 – 24	82	21.6	21.6	21.6
	25 – 34	62	16.3	16.3	37.9
	35 – 44	83	21.8	21.8	59.7
	45 – 54	78	20.5	20.5	80.3
	55 +	75	19.7	19.7	100.0
Occupation	Employed (Full-time)	65	17.1	17.1	17.1
	Employed (Part-time)	57	15.0	15.0	32.1
	Self-employed	66	17.4	17.4	49.5
	Student	79	20.8	20.8	70.3
	Retired	59	15.5	15.5	85.8
	Unemployed	54	14.2	14.2	100.0
Education Level	High School or lower	71	18.7	18.7	18.7
	Some college	77	20.3	20.3	38.9
	Bachelor's Degree	68	17.9	17.9	56.8
	Master's Degree	76	20.0	20.0	76.8
	Doctorate or higher	88	23.2	23.2	100.0
Residence	Local (from the same district)	129	33.9	33.9	33.9
	Domestic (from another district/state)	124	32.6	32.6	66.6
	International	127	33.4	33.4	100.0

The demographic profile, as shown in Table 2, of the 380 respondents participating in the study shows a nearly balanced gender distribution, with males comprising 51.1% (194 individuals) and females making up 48.9% (186 individuals). Age-wise, the respondents were distributed across various groups, ensuring a diverse sample. Young adults aged 18–24 years constituted 21.6% (82 individuals), followed closely by those aged 35–44 years at 21.8% (83 individuals). The 45-54 year age group represented 20.5% (78 individuals), while individuals aged 55 and older accounted for 19.7% (75 individuals). The 25–34-year age group made up 16.3% (62 individuals), providing a broad perspective across different life stages.

Regarding occupation, the participants varied, with students forming the largest group at 20.8% (79 individuals), followed by full-time employed

(17.1%, 65 individuals), self-employed (17.4%, 66 individuals), part-time employed (15.0%, 57 individuals), retired (15.5%, 59 individuals), and unemployed individuals (14.2%, 54 individuals). The educational level of respondents indicated a wide range of academic achievements. The highest education level recorded was a doctorate or higher, represented by 23.2% (88 individuals). This was followed by individuals with a master's degree (20%, 76 individuals), some college education (20.3%, 77 individuals), a bachelor's degree (17.9%, 68 individuals), and those with a high school education or lower (18.7%, 71 individuals). Lastly, the residence of the participants was evenly distributed among local residents from the same district (33.9%, 129 individuals), domestic visitors from other districts or states (32.6%, 124 individuals), and international visitors (33.4%, 127 individuals).

KMO and Bartlett's Test
Table 3. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.985
Bartlett's Test of Sphericity	Approx. Chi-Square	195.146
	df	210
	Sig.	0.000

Table 3 shows, the KMO measures of Sampling Adequacy and Bartlett's Test of Sphericity results from the study provide strong statistical justification for the use of factor analysis. The KMO statistic was recorded at a high value of 0.985. This indicates that the proportion of variance among the variables is well-suited for factor analysis, with minimal partial correlations among items. Bartlett's Test of Sphericity showed a chi-square statistic of 195.146 with 210 degrees of freedom and a significance level of 0.000". This highly significant result ($p < 0.05$) rejects the null hypothesis, affirming that the observed correlation matrix is not an identity matrix and that the variables are related sufficiently to provide a meaningful basis for factor analysis.

Composite Reliability (CR) and Average Variance Extracted (AVE)

Table 4. Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables		λ	λ^2	$1-\lambda^2$	CR	AVE
Tourist Experience (TE)	TE1	0.967	0.935	0.065	0.955	0.876
	TE2	0.902	0.813	0.187		
	TE3	0.938	0.880	0.120		
Perceptions of Local Culture and Environment (PCE)	PCE1	0.969	0.939	0.061	0.946	0.897
	PCE2	0.925	0.856	0.144		
Social Impact on Local Community (SIC)	SIC1	0.962	0.926	0.074	0.965	0.902
	SIC2	0.925	0.856	0.144		
	SIC3	0.961	0.923	0.077		
Economic Impact on Local Community (EIC)	EIC1	0.960	0.921	0.079	0.915	0.844
	EIC2	0.876	0.767	0.233		
Challenges in Rural Tourism (CRT)	CRT1	0.945	0.893	0.107	0.943	0.846
	CRT2	0.861	0.741	0.259		
	CRT3	0.951	0.904	0.096		
Opportunities for Improvement (OI)	OI1	0.968	0.936	0.064	0.970	0.916
	OI2	0.925	0.856	0.144		
	OI3	0.977	0.955	0.045		

Table 4 shows the construct of tourist experience (TE). The composite reliability is 0.955, suggesting excellent internal consistency among the items. The AVE for this construct is 0.876, indicating that a significant proportion of the variance in the observed variables is due to the latent construct. Perceptions of Local Culture and Environment (PCE) also show strong reliability and validity, with a CR of 0.946 and an AVE of 0.897. These values demonstrate that the items related to perceptions are both reliable and significantly capture the underlying construct. The social impact on the local community (SIC) presents a CR of 0.965 and an AVE of 0.902. These high values confirm the reliability of the items measuring social impacts and suggest that they effectively represent the latent construct, capturing a substantial amount of variance. Economic Impact on Local Communities (EIC) has a CR of 0.915 and an AVE of 0.844. Challenges in Rural Tourism (CRT) show a CR of 0.943 and an AVE of 0.846. These statistics indicate that the construct is reliably measured, and the items robustly represent the challenges associated with rural tourism. Lastly, Opportunities for Improvement (OI) recorded the highest CR of 0.970 and an AVE of 0.916. This indicates that the items related to opportunities for improvement are exceptionally consistent and valid for measuring the intended construct.
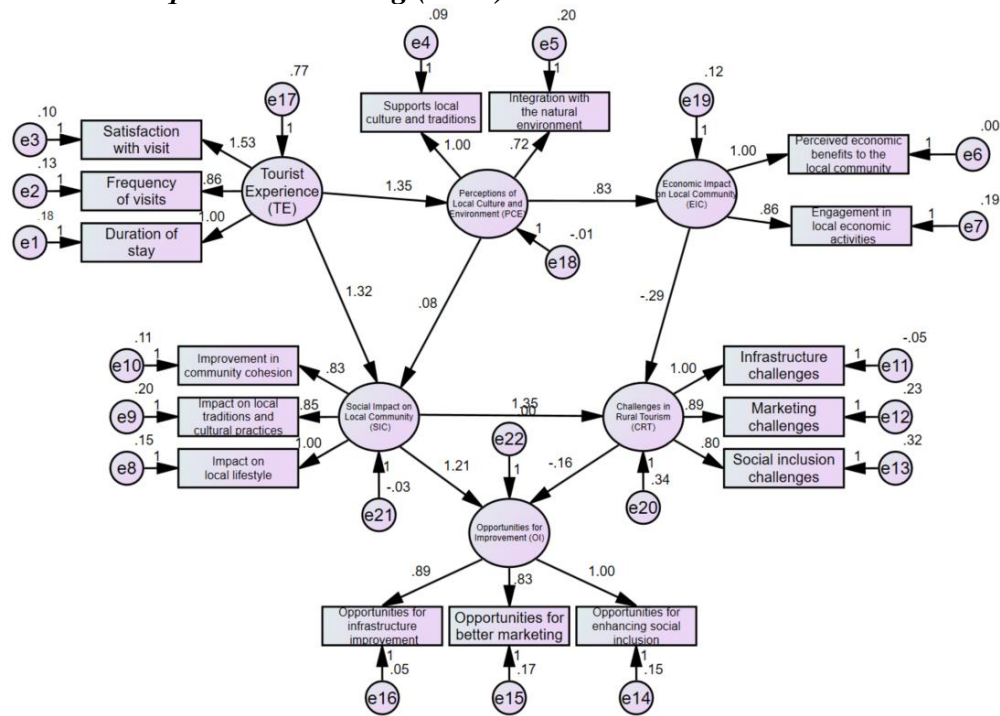
Structural Equation Modelling (SEM)

Fig 2. Structural Equation Modelling

The SEM model (as shown in Figure 2) developed for this study intricately maps the relationships among variables related to the socio-economic impacts of rural tourism in Jammu and Kashmir. The model encompasses several constructs, each measured by specific observed variables that reflect different aspects of tourist experiences and their impacts on the local community. **Tourist Experience (TE)**, a critical construct, is measured through three observed variables: satisfaction with visits ($\lambda = 0.77$), frequency of visits ($\lambda = 0.86$), and duration of stay ($\lambda = 0.88$). This construct is hypothesised to have a direct positive effect on perceptions of **local culture and environment (PCE)** ($\beta = 1.35$) and social impact on the local community (SIC) ($\beta = 1.32$). This suggests that a positive tourist experience enhances tourists' perceptions of local culture and the environment and contributes positively to the social fabric of the community. **Perceptions of Local Culture and Environment (PCE)**, measured by variables such as Supports for Local Culture and

Traditions (λ = 0.77) and Integration with the Natural Environment (λ = 0.72), is posited to positively influence both Social Impact on Local Community (SIC) (β = 0.83) and **Economic Impact on Local Community (EIC)** (β = 0.83). These relationships underscore the idea that favourable perceptions can bolster social cohesion and stimulate economic benefits for local communities. **Economic impact on the local community (EIC)** is measured by variables reflecting economic benefits and engagement in local economic activities. Constructs are expected to negatively affect Challenges in Rural Tourism (CRT) (β = -0.29), implying that economic impacts can mitigate the challenges faced in rural tourism sectors. **Challenges in Rural Tourism (CRT)**, assessed through Infrastructure Challenges (λ = 0.89), Marketing Challenges (λ = 0.80), and Social Inclusion Challenges (λ = 0.86), are anticipated to positively influence **Opportunities for Improvement (OI)** (β = 1.21). This relationship is critical, as it suggests that identifying and understanding these challenges can pave the way for significant improvements in infrastructure, marketing efforts, and social inclusion in rural tourism. Opportunities for Improvement (OI), which includes variables like Opportunities for Infrastructure Improvement (λ = 1.05), Better Marketing (λ = 0.83), and Enhancing Social Inclusion (λ = 1.17), captures potential areas for development and enhancement in rural tourism practices.

Model Fit Summary
Table 5. Model Fit Measures

Measure	Estimate	Threshold	Interpretation
CMIN	270.77	--	--
DF	96	--	--
CMIN/DF	2.82	Between 1 and 3	Excellent
CFI	0.99	>0.95	Excellent
SRMR	0.065	<0.08	Excellent
RMSEA	0.0457	<0.06	Excellent
PClose	0.08	>0.05	Good

The model fit summary for the SEM model is shown in Table 5, which provides excellent evidence that the specified model fits the observed data well. The model's CMIN/DF ratio is 2.82, which indicates that the model is a good fit to the data with minimal discrepancy per degree of freedom. The Comparative Fit Index (CFI) is 0.99, indicating an excellent fit. The SRMR for the model is 0.065, which is below the upper limit of 0.08, suggesting a good fit between the predicted and observed covariances. RMSEA of 0.0457, well below the 0.06 cutoff, signifying a good approximation of the model to the observed data. The PClose value is 0.08, which is above the 0.05 threshold, indicating a satisfactory close fit of the model to the data.

Findings & Discussion

This study employed structural equation modelling (SEM) to explore the socio-economic impacts of rural tourism in Jammu and Kashmir. The model assessed six hypotheses concerning the relationships among various constructs related to tourist experiences, perceptions of the local culture and environment, social and economic impacts on the local community, challenges in rural tourism, and opportunities for improvement. The results provide substantive insights into how these elements interact within the rural tourism context.

H1: Tourist Experience (TE) positively affects Perceptions of Local Culture and Environment (PCE). The SEM results strongly supported this hypothesis, with a path coefficient of 1.35, indicating a significant positive influence of tourist experience on perceptions of local culture and environment. This suggests that tourists who have a fulfilling and engaging experience are more likely to perceive the local culture and environment positively. This finding aligns with existing literature that suggests tourist satisfaction enhances cultural appreciation and environmental awareness, thereby promoting sustainable tourism practices.

Objective: To examine how tourists' experiences shape their views on local culture and environmental preservation.

Addressed: The study found that positive tourist experiences significantly enhance perceptions of local culture and the environment. Tourists who reported fulfilling experiences were more likely to appreciate and support local cultural practices and environmental conservation efforts.

Insights Gained: This finding aligns with previous literature (e.g., Prakash et al., 2016; Jasrotia et al., 2022), which suggests that positive interactions and immersive experiences contribute to a deeper appreciation of cultural and environmental aspects, thereby promoting sustainable tourism practices.

H2: Tourist Experience (TE) positively affects Social Impact on Local Community (SIC). This hypothesis was also supported ($\beta = 1.32$), demonstrating that positive tourist experiences significantly contribute to social impacts in the local community. Tourists who enjoy their visits tend to engage more meaningfully with the community, potentially leading to improved social cohesion and cultural exchange. This result underscores the role of tourism in fostering community interaction and social integration.

Objective: To determine the extent to which tourists' experiences contribute to social changes within rural communities.

Addressed: The SEM analysis confirmed that positive tourist experiences are directly linked to positive social impacts within local communities. These include increased social cohesion and improved cultural exchange between tourists and locals.

Insights Gained: This result corroborates earlier studies (e.g., Jangra et al., 2023; Mir et al., 2022) that highlight the role of tourism in fostering social

integration and community development, reinforcing the idea that well-managed tourism can be a powerful tool for social change.

H3: Perceptions of Local Culture and Environment (PCE) positively affect Social Impact on Local Community (SIC). With a coefficient of 0.83, the data confirmed that positive perceptions of the local culture and natural environment have a favourable impact on the social fabric of the community. Tourists who value cultural and environmental aspects of a tourism destination are more likely to contribute positively to the social dynamics of the area, supporting the notion that perception can influence social outcomes.
Objective: To investigate how the perception of local culture and environment affects social dynamics in the community.
Addressed: The study revealed that favorable perceptions of local culture and the environment significantly contribute to positive social dynamics, including strengthened community ties and enhanced social capital.
Insights Gained: This finding is consistent with the literature (e.g., Reddy et al., 2020; Khan et al., 2020) that underscores the importance of cultural and environmental perceptions in shaping social outcomes in rural tourism contexts.

H4: Perceptions of Local Culture and Environment (PCE) positively affect Economic Impact on Local Community (EIC). Similarly, this hypothesis was validated with a path coefficient of 0.83, indicating that tourists' positive perceptions are closely linked to economic benefits for the local community. This relationship highlights the importance of cultural and environmental sustainability in enhancing economic outcomes by attracting tourists who are willing to spend more and participate in local economic activities.
Objective: To assess how tourists' perceptions translate into economic benefits or challenges for local residents.
Addressed: The research demonstrated that positive perceptions of local culture and the environment are closely associated with economic benefits for the community, such as increased income and employment opportunities.
Insights Gained: This conclusion supports the arguments made in previous studies (e.g., Akram et al., 2021; Jana et al., 2022) that economic gains from tourism are often tied to the tourists' perceptions and engagement with the local culture and environment.

H5: Economic Impacts on Local Community (EIC) negatively affect Challenges in Rural Tourism (CRT). The model showed a negative influence of economic impact on challenges in rural tourism ($\beta = -0.29$), suggesting that economic benefits significantly reduce the perceived challenges. This finding indicates that economic development is a critical factor in mitigating tourism-related challenges, such as infrastructure deficiencies and marketing inadequacies.

Objective: To understand the potential negative consequences of tourism on the community and how these challenges can be mitigated.
Addressed: The study identified several challenges associated with rural tourism, including infrastructural deficits and marketing inefficiencies. However, it also found that economic benefits could help mitigate these challenges.
Insights Gained: This aligns with the findings of earlier research (e.g., Chauhan & Khanna, 2009; Majumder, 2017), which highlight the complex interplay between the benefits and challenges of tourism, particularly in regions with socio-political and infrastructural constraints.

H6: Challenges in Rural Tourism (CRT) positively influence Opportunities for Improvement (OI). The strong positive path coefficient of 1.21 supports the hypothesis that recognising challenges in rural tourism can lead to identifying and enhancing opportunities for improvement. This relationship is critical for strategic planning and development in rural tourism, highlighting the necessity to address challenges to unlock potential improvements in infrastructure, marketing, and social inclusion.
Objective: To explore how the challenges faced in rural tourism can lead to strategies for sustainable development and enhancement of the tourism sector.
Addressed: The study concluded that by understanding and addressing the challenges in rural tourism, stakeholders could unlock significant opportunities for improvement, leading to sustainable development in the sector.
Insights Gained: This conclusion resonates with the suggestions from previous literature (e.g., Sharma et al., 2017; Mir et al., 2022) that advocate for a proactive approach in dealing with tourism challenges, emphasizing the need for strategic planning to enhance the sustainability and effectiveness of rural tourism.

Conclusion
This study explored the intricate dynamics of rural tourism in Jammu and Kashmir using Structural Equation Modelling (SEM) to investigate the relationships between tourist experiences, perceptions of local culture and environment, their socio-economic impacts on the local community, the existing challenges, and potential opportunities for improvement. The analysis confirmed that positive tourist experiences significantly enhance perceptions of local culture and the environment, which in turn have substantial social and economic benefits for the community. Our findings reveal that a positive tourist experience is crucial not only for fostering favourable perceptions of local culture and environment but also for enhancing the social cohesion and economic prosperity of rural communities. These positive experiences and perceptions help mitigate the challenges faced in rural tourism, such as inadequate infrastructure and insufficient marketing. Importantly, the study

highlighted that while economic impacts are pivotal in reducing these challenges, social impacts, though beneficial, have a less direct effect on overcoming tourism-related difficulties.

The findings of this study are strongly connected to the existing body of literature on rural tourism, particularly in the context of regions with unique socio-cultural and environmental characteristics like Jammu and Kashmir. The study builds on the works of Prakash et al. (2016), Jasrotia et al. (2022), and others by empirically validating the positive relationship between tourist experiences and socio-economic outcomes. It also extends the understanding of how challenges in rural tourism can be strategically addressed to foster sustainable development, as discussed in the works of Chauhan & Khanna (2009) and Majumder (2017).

Moreover, the analysis indicated that understanding the challenges in rural tourism is essential for identifying and implementing opportunities for improvement. This proactive approach to addressing challenges not only aids in immediate problem-solving but also contributes to sustainable tourism development by enhancing infrastructure, marketing strategies, and social inclusivity. This research underscores the vital role of comprehensive tourism management that integrates the enhancement of tourist experiences, leverages positive perceptions for community benefit, and actively addresses challenges to unlock further opportunities. For policymakers and stakeholders, these insights advocate for strategies that enrich tourist experiences and perceptions, thereby catalysing broader socio-economic development and leading to a more resilient rural tourism sector in Jammu and Kashmir.

Limitations

This study, while providing valuable insights into the dynamics of rural tourism in Jammu and Kashmir, has limitations that should be considered when interpreting the results. Firstly, the data was collected from a limited geographic area, which may not fully represent other rural tourism settings in different cultural or geographic contexts. Secondly, the study relied on self-reported data, which can be susceptible to biases such as social desirability or recall bias. Thirdly, the cross-sectional design of the study limits our ability to infer causality or track changes over time.

Future Research Area

Future research should aim to address the limitations noted and expand the understanding of rural tourism dynamics. Longitudinal studies could be conducted to assess how the impacts of rural tourism evolve over time and to better establish causal relationships. Comparative studies involving different rural regions within India or between countries could highlight unique challenges and opportunities, enhancing the generalizability of the findings. Incorporating qualitative methods could also enrich the quantitative findings, providing deeper insights into the subjective experiences of tourists and local communities.

Ethical Statement

Informed consent was obtained from all individual participants included in the study. Participants were assured of their anonymity and confidentiality; no personal identifying information was collected. All the data was used solely for the purpose of this research. The study posed no harm to the participants, and care was taken to ensure that all responses were treated with the utmost respect and consideration.

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