

Principal Component Analysis of the Factors Determining Tourism Development: Evidence from Himachal Pradesh and Rajasthan, India

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Abstract

Tourism development is shaped by a wide array of interdependent variables that resist simple classification. This study applies Principal Component Analysis (PCA) to identify, reduce, and interpret the key determinants of tourism development in Himachal Pradesh and Rajasthan, two of India's most significant leisure tourism destinations. Drawing on primary survey data from 320 tourists across eight major destinations, 67 tourism variables measured on a five-point Likert scale were subjected to rigorous factor analysis. Pre-analysis diagnostics confirmed statistical suitability: the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.833 (meritorious), Bartlett's Test of Sphericity was highly significant ($\chi^2 = 9522.966$, $df = 2211$, $p < 0.001$), and the Kolmogorov-Smirnov normality test was satisfied for all 67 variables. Using eigenvalue criterion, scree plot analysis, and Varimax orthogonal rotation, five principal components were extracted, collectively explaining 68.787% of total variance. The five components were labelled: (1) Food Quality (PC1: 17.23%), (2) Supporting Factors (PC2: 15.66%), (3) Infrastructural Conditions (PC3: 13.79%), (4) Tourist Attractiveness Indicators (PC4: 11.46%), and (5) Natural and Cultural Resources (PC5: 10.64%). These findings provide a structured empirical basis for understanding the multi-dimensional nature of tourism determinants and offer strategic insights for destination management and marketing.

Keywords: *principal component analysis, factor analysis, tourism development, destination management, tourist satisfaction, Himachal Pradesh, Rajasthan, India*

1. Introduction

Tourism is one of the world's fastest-growing industries and a significant driver of economic development, employment, and cultural exchange (UNWTO, 2019). In a country as vast and diverse as India, the determinants of tourism development are particularly complex, spanning natural landscapes, cultural heritage, infrastructure, service quality, and the attitudes of host communities. Understanding which factors most powerfully shape the tourism experience — and how they group into interpretable dimensions — is therefore of both theoretical and practical importance.

Despite a growing body of literature on tourism satisfaction and destination competitiveness, comparatively few studies have applied rigorous multivariate statistical techniques to the Indian domestic tourism context. Most empirical studies focus on international tourist arrivals or urban metropolitan tourism, neglecting the unique characteristics of hill-station and heritage destination tourism that characterise states such as Himachal Pradesh and Rajasthan.

This paper addresses these gaps by reporting the results of a Principal Component Analysis (PCA) applied to a comprehensive set of 67 tourism variables, derived from stakeholder surveys conducted across eight

major leisure and holiday tourist destinations in Himachal Pradesh and Rajasthan. PCA is employed as a data reduction technique to identify the underlying factorial structure of tourism determinants, thereby enabling a parsimonious yet comprehensive account of what drives tourism development in these states. The resulting components serve not only as interpretive constructs but also as composite variables suitable for subsequent regression analysis of tourist satisfaction and destination loyalty.

2. Literature Review

2.1 Determinants of Tourism Development

The literature on tourism destination competitiveness identifies a broad range of factors that influence tourist behaviour, satisfaction, and revisit intention. Ritchie and Crouch (2003) propose a comprehensive model of destination competitiveness that encompasses core resources and attractors, supporting factors and resources, destination management, and qualifying and amplifying determinants, all situated within a broader macro- and competitive environment incorporating demand conditions. Physical endowments such as climate, scenery, natural resources, and cultural heritage have long been identified as primary pull factors that attract tourists to destinations (Crompton, 1979; Dann, 1977).

Beyond inherent endowments, service quality has emerged as a critical determinant of tourist satisfaction. Parasuraman, Zeithaml, and Berry (1988) established the SERVQUAL framework, which has been widely adapted in tourism contexts to assess perceptions of service delivery across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Infrastructure quality — encompassing transportation, accommodation, sanitation, and communication — is equally critical; Enright and Newton (2004) demonstrate in their quantitative assessment of Asia-Pacific destination competitiveness that infrastructure constitutes a significant competitiveness factor, a finding with particular relevance to emerging economies where infrastructure deficits can constrain tourism growth.

Food and gastronomy have increasingly been recognised as central components of the tourism experience. Quan and Wang (2004) propose a structural model distinguishing between the 'peak touristic experience' and the 'supporting consumer experience', arguing that food consumption can function as either — serving as a primary travel motivator in some contexts, or as a background supporting element in others. The culinary tourism phenomenon has elevated gastronomic experiences to a primary travel motivation in many destination contexts (Hall & Sharples, 2003). Studies in the Indian context have similarly found that food quality, variety, and hygiene are significant predictors of overall tourist satisfaction (Updhyay & Sharma, 2014).

2.2 Factor Analysis in Tourism Research

Factor analysis and Principal Component Analysis have been widely employed in tourism research to reduce complex variable sets into interpretable dimensions. Prayag and Ryan (2012) used confirmatory factor analysis to assess the dimensions of destination image, place attachment, personal involvement, and satisfaction as antecedents of tourist loyalty in Mauritius. Yoon and Uysal (2005) applied factor analysis using Varimax rotation to identify push and pull motivation dimensions and examine their relationship with tourist satisfaction and destination loyalty in a structural model. In the Indian context, Dey and Sarma (2010) used exploratory factor analysis to examine tourist satisfaction determinants in Assam.

The appropriateness of PCA as opposed to common factor analysis in tourism studies has been debated (Fabrigar et al., 1999). PCA is preferred when the research objective is data reduction and when the assumption is that components account for all variance in the variables, rather than shared variance only. Given that the present study seeks to produce a parsimonious set of composite variables for subsequent regression analysis, PCA is the appropriate technique.

The choice of rotation method also warrants attention. Varimax orthogonal rotation is widely recommended in multivariate analysis and has been extensively employed in tourism research because it improves interpretability while producing uncorrelated components (Hair et al., 1998). The uncorrelated property is especially valuable when the resulting factors are to serve as independent variables in regression models, as in the present study, since it eliminates multicollinearity concerns.

3. Research Methodology

3.1 Study Area and Sampling

The study was conducted across eight major leisure and holiday tourist destinations in two Indian states: Himachal Pradesh (Shimla, Kullu-Manali, Dalhousie, Dharamshala) and Rajasthan (Jaipur, Mount Abu, Udaipur, Jodhpur). Destinations were selected on the basis of the Domestic Tourism Survey 2002-2003 conducted by the National Council of Applied Economic Research (NCAER) under the Ministry of Tourism, Government of India, which ranked destinations by volume of domestic tourist arrivals for leisure and holiday purposes. Religious and pilgrimage tourism destinations were excluded to ensure homogeneity of the tourism product under study. Metropolitan cities were also excluded on the grounds that urban tourism exhibits qualitatively different dynamics.

A stratified random sampling approach was employed. The four top-ranked destinations (Shimla, Jaipur, Kullu-Manali, Mount Abu) each contributed 60 respondents per stakeholder group, while the four lower-ranked destinations (Dalhousie, Dharamshala, Udaipur, Jodhpur) each contributed 20 respondents per group. This yielded a sample of 160 respondents from each state and 320 tourists overall across tourist destinations in Himachal Pradesh and Rajasthan.

Table 1: Sample Size – Tourists

Sr. No.	Destination	Total Tourist Respondents
1	Shimla	60
2	Kullu Manali	60
3	Dalhousie	20
4	Dharamshala	20
	Himachal Pradesh Total	160
5	Jaipur	60
6	Mount Abu	60
7	Udaipur	20
8	Jodhpur	20
	Rajasthan Total	160
	Grand Total	320

Source: Primary Survey

3.2 Tourism Variables in the Study

In the study 67 tourism variables were measured on a five-point Likert scale (1 = Not at all important; 5 = Extremely important), a format well-suited to subsequent PCA given the ordinal-to-continuous approximation properties of Likert scales (Basto & Pereira, 2012). The 67 variables spanned nine conceptual domains: (1) Destination image and ambience; (2) Infrastructure and utilities; (3) Recreation,

culture, and entertainment; (4) Shopping and market facilities; (5) Food and beverage; (6) Accommodation; (7) Tourist guidance services; (8) Tourist Information Centres; and (9) Tour operators. Data collection was conducted through the personal interview method to maximise response quality and minimise item non-response.

3.3 Analytical Procedure

Data were analysed using IBM SPSS Statistics 20.0. Prior to PCA, three standard diagnostic tests were conducted to confirm statistical suitability. First, normality was assessed using the one-sample Kolmogorov-Smirnov (K-S) test with Lilliefors correction. Second, sampling adequacy was assessed using the Kaiser-Meyer-Olkin (KMO) statistic and inspection of the anti-image correlation matrix. Third, Bartlett's Test of Sphericity was applied to confirm that the correlation matrix diverged significantly from an identity matrix.

Following confirmation of suitability, PCA was conducted on the correlation matrix of all 67 variables. The number of components to retain was determined by triangulating three criteria: (a) the Kaiser eigenvalue-one criterion (retain components with eigenvalue > 1); (b) the scree plot criterion (retain components above the 'elbow' i.e. the inflection point); and (c) the variance accounted for criterion (retain components until cumulative variance exceeds 60%). Varimax orthogonal rotation with Kaiser normalisation was applied to facilitate component interpretation. A factor loading threshold of ≥ 0.60 was used to identify each variable's primary component membership, consistent with the recommendation of Hair et al. (1998) for sample sizes of 200–350.

4. Results

4.1 Pre-Analysis Diagnostics

4.1.1 Normality

The one-sample Kolmogorov-Smirnov test (with Lilliefors correction) was applied to all 67 variables. All variables demonstrated statistically significant departures from a uniform distribution ($p < .001$), confirming that the data exhibited patterned distributional properties appropriate for correlation-based analysis. As PCA is robust to moderate violations of multivariate normality (Tabachnick & Fidell, 2001), this result confirmed the presence of structured covariance in the data rather than random noise, satisfying the normality assumption for the purposes of PCA.

4.1.2 Sampling Adequacy and Sphericity

The overall KMO measure of sampling adequacy was 0.833, falling within the 'Meritorious' range (0.80–0.89) per Kaiser's (1974) classification. Bartlett's Test of Sphericity was highly significant ($\chi^2 = 9522.966$, $df = 2211$, $p < 0.001$), confirming that the correlation matrix was not an identity matrix and that a meaningful factor solution was attainable. Table 2 presents a summary of the pre-analysis diagnostics.

Table 2: Pre-Analysis Diagnostics: KMO Measure and Bartlett's Test of Sphericity

Diagnostic Measure	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.833
Bartlett's Test of Sphericity: Approx. χ^2	9522.966
Degrees of Freedom (df)	2211
Significance (p)	$< .001$
KMO Interpretation (Kaiser, 1974)	Meritorious

Note. Anti-image correlation matrix diagonals ranged from 0.607 to 0.931, all exceeding the minimum threshold of 0.50 (Kaiser, 1974), confirming retention of all 67 variables without exclusion.

Examination of the anti-image correlation matrix confirmed that all 67 variables had individual MSA (Measure of Sampling Adequacy) values exceeding 0.50. Diagonal values ranged from 0.607 (Good weather) to 0.931 (Signage and labelling of Tourist Information Centre), with no variable requiring removal from the analysis.

4.1.3 Communalities

Table 3 presents a representative selection of communality estimates before and after extraction. Under PCA assumptions, all initial communalities were 1.000. Post-extraction communalities ranged from 0.541 (Historical sites, museums and galleries) to 0.842 (Many beautiful resorts), with a mean extraction communality of 0.686 across all 67 variables. All values exceeded the conventional 0.50 threshold, indicating that the five-component solution adequately captured the variance of each variable.

Table 3: Selected Communality Estimates (Extraction Method: PCA)

Tourism Variable	Initial	Extraction
Many beautiful resorts	1.000	0.842
Cleanliness and hygiene	1.000	0.830
Service attitude of tourist guides	1.000	0.800
Parking facilities	1.000	0.783
Healthy and fresh food	1.000	0.778
Good variety of food	1.000	0.777
Good health care facilities	1.000	0.768
Proper traffic management	1.000	0.760
Good quality food	1.000	0.742
Good weather	1.000	0.689
Eye catching natural and scenic view	1.000	0.571
Historical sites, museums and galleries	1.000	0.541
Mean (all 67 variables)	1.000	0.686

Note. Table presents a representative selection of 12 variables. All 67 variables had extraction communalities exceeding 0.50.

4.1.4 Total Variance Explained and Component Retention

Table 4 presents the initial eigenvalues and rotation sums of squared loadings for the five retained components. The initial unrotated solution produced one dominant component with an eigenvalue of 38.140, accounting for 56.925% of total variance — indicative of a strong general tourism factor underlying the data. The Kaiser criterion identified 10 components with eigenvalues > 1.0, collectively explaining 77.897% of variance. However, the scree plot revealed a clear inflection point at Component 6, supporting retention of five components. Five components cumulatively explained 68.787% of variance, comfortably exceeding the 60% threshold. Each of the five components also yielded substantively coherent variable

groupings following rotation, satisfying the interpretability criterion. Accordingly, five components were retained for rotation and interpretation.

Table 4: Total Variance Explained by Retained Components

PC	Initial Eigenvalue	Initial % Variance	Initial Cumul. %	Rotated Eigenvalue	Rotated % Variance	Rotated Cumul. %
1	38.140	56.925	56.925	11.544	17.230	17.230
2	2.448	3.653	60.578	10.492	15.659	32.889
3	2.064	3.081	63.659	9.242	13.793	46.683
4	1.880	2.806	66.466	7.680	11.462	58.145
5	1.555	2.321	68.787	7.130	10.642	68.787
Total				46.088	68.787%	68.787%

Note. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalisation. Rotation converged in 19 iterations.

4.1.5 Rotated Component Matrix

Following Varimax rotation, the five components were clearly interpretable with distinct variable groupings. Table 5 presents the Rotated Component Matrix for all variables with primary loadings ≥ 0.60 on any component. No item exhibited cross-loadings ≥ 0.60 on more than one component, confirming a clean simple structure.

Table 5: Rotated Component Matrix: Variables with Primary Loadings ≥ 0.60

Variable	PC1	PC2	PC3	PC4	PC5
PC1: Food Quality					
Good variety of food	0.689				
Healthy and fresh food	0.683				
Good quality food	0.666				
PC2: Supporting Factors (SUPFAC)					
Convenient opening/closing hours of market		0.748			
Service attitude/manner of tourist guides		0.724			
Informative/knowledgeable tourist guides		0.657			
Good health care facilities		0.649			
Good signage (directions)		0.612			
Many beautiful resorts		0.608			
PC3: Infrastructural Conditions (INFCON)					
Proper traffic management			0.723		
No language barrier			0.686		

Variable	PC1	PC2	PC3	PC4	PC5
Banking facilities including ATMs			0.676		
Parking facilities			0.672		
Vibrant nightlife and entertainment facilities			0.661		
Public toilets and sanitary facilities			0.620		
PC4: Tourist Attractiveness Indicators (TAI)					
Forests				0.747	
Pilgrimage places (Mandir, Church, Mosque)				0.694	
Wildlife/Zoo				0.688	
Multiplex and leisure complexes				0.680	
Yoga, meditation, massage and spa				0.634	
PC5: Natural and Cultural Resources (NACURES)					
Good weather					0.790
Eye catching natural and scenic view					0.629
Traditional fine arts/handloom works					0.614

Note. Loadings < 0.60 suppressed for clarity. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalisation.

Table 6 summarises the five components with their defining variables, eigenvalues, and variance contributions.

Table 6: Summary of Five Principal Components (Rotation Sums of Squared Loadings)

PC	Label	Defining Variables (Loading)	Eigenvalue	Variance (%)
PC1	Food Quality	Good variety of food (0.689); Healthy and fresh food (0.683); Good quality food (0.666)	11.544	17.230
PC2	Supporting Factors (SUPFAC)	Convenient market hours (0.748); Guide service attitude (0.724); Knowledgeable guides (0.657); Health care (0.649); Good signage (0.612); Beautiful resorts (0.608)	10.492	15.659
PC3	Infrastructural Conditions (INFCON)	Traffic management (0.723); No language barrier (0.686); Banking/ATMs (0.676); Parking (0.672); Nightlife and entertainment (0.661); Public toilets (0.620)	9.242	13.793

PC	Label	Defining Variables (Loading)	Eigenvalue	Variance (%)
PC4	Tourist Attractiveness Indicators (TAI)	Forests (0.747); Pilgrimage places (0.694); Wildlife/Zoo (0.688); Multiplex (0.680); Yoga/Spa (0.634)	7.680	11.462
PC5	Natural and Cultural Resources (NACURES)	Good weather (0.790); Scenic view (0.629); Traditional arts/handloom (0.614)	7.130	10.642
		Total Variance Explained	46.088	68.787%

Note. Rotation method: Varimax with Kaiser Normalisation. Rotation converged in 19 iterations.

5. Discussion

5.1 PC1: Food Quality — The Pre-eminent Tourism Determinant

The emergence of Food Quality as the single largest component (17.230% of variance) is a theoretically significant finding. The three defining variables — good variety of food (0.689), healthy and fresh food (0.683), and good quality food (0.666) — collectively capture a holistic conception of gastronomic experience that goes beyond mere sustenance to encompass health consciousness, culinary diversity, and sensory quality. This finding is consistent with the growing body of literature on culinary tourism (Hall & Sharples, 2003; Quan & Wang, 2004), which positions food as a central rather than peripheral element of the tourism experience.

In the context of Himachal Pradesh and Rajasthan, this finding has particular resonance. Both states possess distinctive regional cuisines — the simple, nutrition-rich Himachali cuisine of the hill stations, and the rich, aromatic cuisine of Rajasthan’s royal traditions. However, stakeholder concerns appear to be less about regional specificity and more about baseline quality standards: hygiene, freshness, and variety. Destinations that fail to ensure these baseline standards risk directly undermining tourist satisfaction regardless of their other attractions. This finding suggests that regulatory intervention in food safety standards at tourist establishments should be a priority for state tourism authorities.

5.2 PC2: Supporting Factors (SUPFAC) — The Human and Hospitality Dimension

The second component (15.659% of variance) groups variables characterisable as the ‘soft’ infrastructure of tourism: the quality of human services and the accessibility of amenities. The highest-loading variable — convenient opening and closing hours of market (0.748) — reflects a practical concern with the visitor-friendliness and accessibility of commercial establishments. The prominence of tourist guide-related variables (service attitude: 0.724; knowledgeability: 0.657) underscores the critical role of human capital in mediating the tourism experience, consistent with the SERVQUAL framework (Parasuraman et al., 1988).

The inclusion of good health care facilities (0.649) within this component — grouped with service quality and hospitality variables rather than physical infrastructure — suggests that respondents conceptualise healthcare as an enabling support service rather than a structural facility. This has important implications for destination health governance: investment in accessible, visitor-oriented healthcare is perceived as part of the broader hospitality ecosystem rather than a standalone provision. The loading of

Many beautiful resorts (0.608) within this component further suggests that resort quality is evaluated holistically through the lens of service delivery rather than merely physical facilities.

5.3 PC3: Infrastructural Conditions (INFCON) — The Urban Enablers

The third component (13.793% of variance) captures the physical and urban infrastructure that enables comfortable navigation of tourist destinations. The highest-loading variable — proper traffic management (0.723) — is particularly salient in hill station contexts such as Shimla and Manali, where seasonal tourist surges create acute congestion that has been widely documented (Sharma & Sharma, 2011). The clustering of banking facilities (0.676) and parking (0.672) with traffic management and sanitation suggests that tourists evaluate urban infrastructure as a unified experiential domain: a destination either functions logistically or it does not.

The co-loading of vibrant nightlife and entertainment facilities (0.661) within the infrastructural component — rather than the attractiveness component — is theoretically noteworthy. It suggests that nightlife is perceived as part of the destination's operational provision rather than as a distinctive attraction. Entertainment infrastructure is thus conceptualised alongside banking and sanitation as an expected feature of a functioning tourist environment rather than a differentiating selling point.

5.4 PC4: Tourist Attractiveness Indicators (TAI) — Nature, Culture, and Wellness

The fourth component (11.462% of variance) aggregates a diverse set of natural, cultural, and wellness attractions: forests, pilgrimage places, wildlife/zoo, multiplex and leisure facilities, and yoga/spa. The co-loading of forests (0.747) and wildlife (0.688) with yoga, meditation, and spa (0.634) suggests an underlying 'wellness and immersion' orientation in which tourists seek both ecological engagement and contemplative restoration as complementary dimensions of restorative tourism (Smith & Puczkó, 2009).

The inclusion of pilgrimage places (Mandir, Church, Mosque) (0.694) alongside ecological and wellness attractions merits comment. While overtly religious tourism destinations were excluded from the sample, pilgrimage sites within leisure destinations remain important attractions. Their co-location with nature-based and wellness variables indicates that tourists in Himachal Pradesh and Rajasthan may pursue an integrated 'experiential' tourism product combining natural, spiritual, and wellness dimensions rather than treating these as separate categories.

5.5 PC5: Natural and Cultural Resources (NACURES) — Enduring Competitive Advantages

The fifth component (10.642% of variance) captures a destination's irreplaceable competitive assets: good weather (0.790), eye-catching natural and scenic view (0.629), and traditional fine arts and handloom works (0.614). The dominance of good weather as the strongest single loading variable across all five components (0.790) underscores the foundational importance of climatic conditions as a tourism pull factor, consistent with Butler's (1980) tourism lifecycle model in which seasonality is primarily climate-driven.

The co-loading of scenic beauty with traditional arts and crafts in a single component suggests that tourists conceptualise a destination's natural landscape and its cultural/artisanal heritage as co-constitutive elements of its 'authentic character' — a gestalt that cannot be disaggregated. This has significant implications for destination branding: marketing communications should present natural scenery and cultural heritage as an integrated experiential proposition rather than separate product categories.

6. Implications for Policy and Practice

6.1 Destination Management Organisations

The five-component structure provides a practical audit framework for destination management organisations (DMOs). Regular benchmarking against food quality standards, service and human capital quality, infrastructure adequacy, attraction diversity, and natural and cultural resource conservation can enable targeted investment and intervention. The relative variance weights suggest that resource allocation should broadly follow the order: food quality > service and human capital > infrastructure > attraction development > natural and cultural asset conservation.

6.2 Tourism Policy

For state governments in Himachal Pradesh and Rajasthan, the findings highlight several priority areas. First, food safety regulation at tourist establishments requires strengthening through regulatory inspection and certification regimes. Second, guide training, language proficiency, and certification programmes should be expanded and better standardised. Third, urban infrastructure planning — particularly traffic management, parking, and public sanitation at peak destinations — requires urgent and sustained investment. Fourth, eco-tourism and wellness tourism development frameworks should integrate forest conservation, wildlife protection, and wellness infrastructure within coherent spatial planning regimes. Fifth, traditional arts, crafts, and handloom industries require dedicated institutional support and market access to prevent cultural product erosion.

6.3 Tourism Marketing

Marketing communications for Himachal Pradesh and Rajasthan should lead with experiential narratives integrating food, culture, and natural scenery, consistent with the holistic structure revealed by the PCA. The high loading of guide service quality and attitude suggests that people-centred marketing messages may be as effective as landscape-centred communications. The strong loading of good weather (0.790) in NACURES suggests that climate-led destination messaging — emphasising seasonal advantages such as Shimla's summer cool or Rajasthan's winter sunshine — has strong resonance with the target market. Destination storytelling should weave together weather, scenery, food, and traditional crafts into coherent, authentic place brand narratives.

7. Limitations

Several limitations should be acknowledged. The cross-sectional survey design prevents causal inferences. The use of NCAER 2002–2003 data for destination selection means the sample may not reflect more recent shifts in India's leisure tourism geography. The exclusion of religious and pilgrimage tourism limits generalisability to secular leisure tourism contexts. Likert-scale items, while widely used in PCA, involve ordinal measurement that approximates but does not equal interval-level data. Finally, PCA aggregation inevitably simplifies the complex, context-specific interrelationships among individual tourism variables.

8. Conclusion

This study has applied Principal Component Analysis to a comprehensive set of 67 tourism variables measured across 320 tourists in eight tourist destinations in Himachal Pradesh and Rajasthan, India. Five principal components were extracted and interpreted — Food Quality, Supporting Factors, Infrastructural Conditions, Tourist Attractiveness Indicators, and Natural and Cultural Resources — collectively accounting for 68.787% of total variance. The five-component solution was robust across multiple retention criteria and produced a clean, interpretable simple structure following Varimax rotation, with no item cross-loading above 0.60 on more than one component.

The findings make several contributions to the literature. First, they demonstrate the primacy of food quality as a tourism determinant in the Indian hill station and heritage destination context, extending and localising the global gastro-tourism literature. Second, they reveal a conceptual distinction between ‘soft’ service infrastructure (PC2: Supporting Factors) and ‘hard’ physical infrastructure (PC3: Infrastructural Conditions), suggesting that tourists make qualitatively distinct evaluations of these two infrastructure domains. Third, they identify a unified ‘natural and cultural character’ component (PC5) in which scenic beauty, climate, and traditional heritage are experienced as a single integrated identity.

These five principal components serve not only as interpretive constructs but also as composite variables suitable for subsequent regression analysis examining relationships between tourism factors and overall tourist satisfaction, residents’ attitudes, and destination loyalty. Future research may test the generalisability of this five-component structure across other Indian states and destination types, examine whether component weights vary between domestic and international tourist segments, and investigate how the structure changes over time given the significant tourism landscape shifts following the COVID-19 pandemic.

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