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A Comparative Study on Tourist Preference for Homestay Destinations among Darjeeling, Kalimpong and Sikkim

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Abstract

In hill-bound nature-based tourism, the popularity of Homestays has been growing very fast in the hilly regions of India, and the same has been witnessed in the two hilly districts of West Bengal – Darjeeling, Kalimpong and Sikkim, too. This present study attempted to investigate the competitive tourist-pulling capability of homestay-based tourist destinations from the perspective of destination-attractiveness-based tourist preference. In this study, the extent of the homestay site's attraction diversity was measured by the Attraction Diversity Index (ADI), followed by the use of the multi-criteria decision-making tool, TOPSIS, to assess the relative competitive position of these destinations based on diverse attractions and homestay performance. Finally, a paired sample t-test was applied to identify any difference in tourist preferences among these destinations. Interestingly, the findings of high attraction diversity for Sikkim relative to West Bengal seemed to be its tourists' footfall-builder and reflected through a tight neck-to-neck competition in TOPSIS score with marginal differences. The paired t-test confirmed the presence of a significant statistical difference in tourists' preference for these homestay destinations. However, Darjeeling is found to be marginally ahead of others but experiencing fierce competition, indicating a serious concern for tourism policy-makers to give an edge over their rivals.

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Keywords: attraction diversity index, attraction cluster equity, destination attractiveness, homestay tourism, mixed weighting, TOPSIS method.

1. Introduction

In nature-based leisure tourism, Darjeeling has always been an eternally beckoning summer and winter destination to all types of nature-loving tourists across the globe. Tourists often choose homestays with rich natural beauty and historical sites for the opportunity to interact with local communities, learn about their vibrant culture and traditions, have immersive homestay experiences and participate in unique activities (Chen et al., 2022; Nepal & Ray, 2023). Homestays can be more affordable than hotels, offering personalized service and a sense of community (Gössling et al., 2022; Yang et al., 2023). Some tourists are drawn to homestays for their eco-friendly practices, and contribution to local economies, and balancing tourist needs with the well-being of local communities and environmental protection is crucial for sustainable homestay development (Agyemang et al., 2022; Li et al., 2023). Cleanliness, comfort, and availability of basic amenities are essential for meeting tourist expectations (Gössling et al., 2022; Yang et al., 23). On the one hand, positive interactions with hosts, cultural exchange opportunities and authentic experiences significantly impact tourist satisfaction (Sharma, A., & Hasti, 2023).

The Eastern Himalayan region, encompassing Darjeeling, Kalimpong, and Sikkim, has witnessed a surge in homestay tourism in recent years. The popularity of Darjeeling as a tourist hub has led to an increase in homestay options since it boasts a long history of homestay tourism, dating back to the British era with traditional "Lepcha-huts" and charming cottages provide a glimpse into local life and culture (Gurung, 2019). However, standardization, quality control, and responsible tourism practices are emerging concerns being worked upon by the "Darjeeling Homestay Association" (Lepcha & Sharma, 2020). Kalimpong, with its picturesque, serene ambience and a peaceful escape from the hustle of Darjeeling, is rapidly becoming a popular homestay destination and thereby offering access to scenic treks, eco-friendly practices using local materials and organic produce which resonates with sustainable tourism options (Gurung,

2019). Limited marketing and awareness compared to Darjeeling pose a challenge for Kalimpong homestays. Homestay tourism in Sikkim ranges from traditional village houses to luxurious boutique homestays, catering to different budgets and preferences is actively promoted by the State Government, aiming to provide economic opportunities for local communities and showcase the state's rich cultural heritage (Rai & Chettri, 2018). In Darjeeling, Kalimpong, and Sikkim, homestays have become integral components of local tourism, providing visitors with a unique opportunity to engage with the rich cultural tapestry of the Himalayas (Lama & Chhetri, 2019). For the last couple of years, Homestay-based tourism has been witnessing substantial competition among Darjeeling, Kalimpong and Sikkim, therefore making Darjeeling, Kalimpong and two districts of Sikkim the four hot Homestay tourist destinations in this Singalila range of Eastern Himalayas.

This study has made an attempt to analyse the relative tourist preferences for the next Homestay destination in relation to its competitive performance and diversity of a destination's attractiveness in rural hilly hamlets of Darjeeling, Kalimpong and Sikkim using a multi-criteria decision-making tool, TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) for appraising the attributes shaping the tourist preference, destination competitiveness and ADI (Attraction Diversity Index) (George et al., 2016). Finally, the paired t-test was used to determine the presence of any significant difference in homestay tourists preference for these hotspots of this region.

2. Literature Review

Destination attractiveness has been under the regime of research as a tool to increase tourist traffic for the last couple of years (Buhalis, 2000; Formica, 2002; Hu & Ritchie, 1993; Kim & Lee, 2002). It initially stirs and motivates tourists to choose a touring destination compatible with their interests and preferences (Benckendorff & Pearce, 2003) and where they can get themselves involved in various activities (Funk et al., 2004) like nature trailing, trekking, safari etc. Destination competitiveness makes a tourist destination capable of attracting and retaining visitors relative to its competitors (Assaker, 2015; Crouch & Ritchie, 1999). The feelings, beliefs, opinions, and importance

attached to various attributes defining a tourist destination determine the image that a visitor takes away (Hu & Ritchie, 1993). Natural and cultural resources (Pearce, 2005), accessibility and infrastructure (Kozak & Deccio, 2000), competitive pricing, attraction-diversity, quality of guest servicing (Pike & Page, 2009) and promotion contribute to building a destination's appeal. Destination preference influences a tourist's choice of one destination over another of which seeking adventure or cultural immersion serves as a 'push' factor (Dann, 1981) whereas natural beauty, vibrant nightlife, historical significance etc. act as a 'pull' factor (Crompton, 1979). Identification of the related influential factors can be possible with an evaluation and ranking system of tourist destination sites (Lai & Vinh, 2012). A past study (Ali et. al., 2012) has also pinpointed the importance of tourist Destination choice as a decision-making tool to select the best among popular destination alternatives.

The Attraction Diversity Index (ADI) has emerged as a valuable tool for assessing the appeal and competitiveness of tourist destinations (George et al., 2016). It measures the variety and richness of attractions within a destination, considering both natural and cultural elements. ADI can be used to compare the attraction diversity of different destinations and identify those with a competitive advantage (Getz & Carruthers, 2013) which in turn helps in chalking out marketing strategies and resource allocation. It can guide destination planning and development by highlighting areas where attraction diversity can be enhanced (Jiang et al., 2018) by creating new attractions, promoting existing ones, or revitalizing underutilized areas. Understanding the relationship between ADI and tourist preferences can help with segmentation and targeting efforts (Goh et al., 2020). Destinations with high ADI scores may attract tourists seeking diverse experiences, while those with lower scores may appeal to niche interests.

A competitive destination offers attractive features that resonate with tourists' preferences, leading to increased visitation and economic benefits (Assaker, 2015). Competitive measurement of a tourist destination's attractiveness assists in identifying the loopholes, and lacunas present in the tourist sites and their remedial measures (Choudhary et al., 2017; Choudhary & Gangotia, 2017). Competitive measurement of a tourist destination's attractiveness assists in

identifying the loopholes, and lacunas present in the tourist sites and their remedial measures (Bhat & Malik, 2015; Choudhary et al., 2017). A significant number of earlier studies on competitive marketing of destinations used the 6As (Attractions, Accommodation, Accessibility, Activities, Amenities) framework of tourism destinations (Ashley et al., 2003; Buhalis, 2000; Cooper et al., 2008; Getz, 2005; Leiper, 2005; Mason, 2008; Richards, 2002) in order to prioritise and competitive ranking of different tourist destinations in terms of attractiveness so as to analyse the tourist preference for a vacation destination and also get idea on success/failure level of a different tourism destination attributes (Lai et al., 1994; Buhalis, 1999).

2.1 Research Gap

There is a dearth of studies as of now available on attraction diversity and comparative performance of homestay-based tourism among Darjeeling and Kalimpong hills of West Bengal and a part of South & East districts of neighbouring Sikkim to unearth their competitive homestay tourist pulling capability & their relative performances.

2.2 Objective of the Study

This present study tried to investigate the competitive position of Homestay based tourism across the hills of much-visited Homestay destinations - Darjeeling and Kalimpong and a part of south and east districts of Sikkim through analysing tourist-guest take-home experiences on different homestay destination attributes using TOPSIS method along with their attraction-diversity which helps to build-up tourist-traffic.

3. Research Methodology

3.1 Research Approach, Population and Sampling

The study used descriptive type design in the form of a cross-sectional study of 200 tourist guests who stayed or preferred to stay in the homestays of the three much-visited homestay destinations around Darjeeling, Kalimpong & Sikkim using convenience sampling (Bryman, 2016) due to respondents easy accessibility close to hand to assess various post-stay experiential factors affecting the satisfaction of the homestay tourists and also partly 'exploratory' too to gain a

better insight and unearth hitherto unexplored competitive standing of the three much-visited homestay destinations

3.2 Questionnaire and Data Collection

The requisite primary data were collected in both online & offline mode from the respondents through questionnaires during the peak period of April 2023 and May 2023. Questionnaires consisted of a demographic section and statements relating to Questionnaires consisted of the sections namely demographic background and statements relating to the 15 homestay performance criteria (Table 1) identified for the study from past literature (Akbar et al., 2017; Choon & Jamal, 2018; Chen & Law, 2017; Getz & Carruthers, 2016; Funk et al., 2004; Le et al., 2018; Yang et al., 2018) of which 4 are non-beneficiary types i.e. dissatisfaction-generators and the rest 11 are beneficiary types for being tourists satisfaction-boosters. Data collection from respondents was made in two phases where initially each of them were asked to rate the importance of 15 attributes for Homestay destination selection and then to evaluate the three Homestay destinations under study based on the identified attributes through 5-point Likert-rating ranging from 1 being lowest to 5 being a highest matter of concern with respect to the statement/question with respect to the potential satisfaction generating attributes and reverse coding for dissatisfaction generating attributes.

Table 1: *Homestay Destination Attributes/Criteria*

Criteria No	Criteria/Attribute	Nature
C1	Climate & Scenic Beauty of Surrounding	Satisfaction Generator i.e. Beneficiary
C2	Extent of Sight-seeing Opportunities	Satisfaction Generator i.e. Beneficiary
C3	Distinctive Local Cultural, Ethnic, Religious & Historical Features & Attractions	Satisfaction Generator i.e. Beneficiary
C4	Good Quality Comfortable Fooding & Lodging with all Amenities	Satisfaction Generator i.e. Beneficiary
C5	Welcoming Attitude of Local Community to Tourists & Feel at home staying ambience	Satisfaction Generator i.e. Beneficiary
C6	No and Density of Homestays	Satisfaction Generator i.e. Beneficiary

C7	Maintenance of Overall Cleanliness, Hygiene, Proper Sanitation & COVID protocol	Satisfaction Generator i.e. Beneficiary
C8	Chances of Various Hill sickness (Nausea/ Vomiting, Vertigo, Hill Diarrhea, Fever etc)	Dissatisfaction Creator i.e. Non-beneficiary
C9	Risk of Natural Disaster- Landslide, In-transit road block due to rain/snowfall	Dissatisfaction Creator i.e. Non-beneficiary
C10	Scope of Hilly adventures (Nature-trailing, Trekking, Paragliding, River-Rafting etc)	Satisfaction Generator i.e. Beneficiary
C11	Availability of Nearby Shopping, Sporting & Recreational/Cultural activities	Satisfaction Generator i.e. Beneficiary
C12	Road Condition, steep bends, Elevation & Navigability using Google Map	Dissatisfaction Creator i.e. Non-beneficiary
C13	Cost of Fooding, Lodging & Customised on-site touring	Dissatisfaction Creator i.e. Non-beneficiary
C14	Proximity of Health Clinic/Hospital & ATM	Satisfaction Generator i.e. Beneficiary
C15	Online Booking, cashless UPI based Payment mode	Satisfaction Generator i.e. Beneficiary

The weights of each of the parameters were calculated using mixed-weighting (Entropy and CoV method) where $\sum Wi=1$; where *i* denotes i-th criteria/attribute. The collected data were analysed using the TOPSIS method for assessing relative tourist preference and traffic-pulling attraction-diversity of these Homestay destinations using Attraction Diversity Index (ADI).

3.2.1 Mixed mechanism of weighting the variables

The reason behind adopting mixed-weighting approach in this study using entropy and coefficient-of-variation adheres to dampen the outlier-influence through connectivity among multiple datasets and counteract equalisation-problem arising out of entropy-only approach (Xia et al., 2020),

Entropy based weighting method: Here m criteria and n samples are used in the evaluation and the measured value of i-th criteria in the j-th sample is denoted as xij. In the first step of normalisation of measured values, the normalised value of the ith criteria in jth sample is denoted by pij, and calculated using the formula

$pij = xij/\Sigma xij$ ……. Eqn. (1), where j = 1, 2 ...n

The entropy denoted by Ei of i-th criteria is given by

$$Ei = -\Sigma pij.ln(pij)/ln(m)\text{……..} \text{ Eqn. (2)}$$

The entropy value Ei ranges between 0 and 1. The weight of ith parameter (wi) is given by

$$Wientropy = (1 - Ei)/\Sigma(1 - Ei)\text{……..} \text{ Eqn. (3), where i = 1, 2 ...m}$$

Coefficient of Variation based weighting method: The coefficient of variation for the dataset (Xij) m×n i.e. 'm' observations for 'n' factors are calculated using the following steps after normalisation.

Firstly, mean and standard deviation for each of 'n' column-factors are determined as

$$\underline{Xj} = \frac{\Sigma Xij}{m} \text{ and } S_j = \sqrt{(1/m)\sum_1^m \quad (Xij - \underline{Xij})^2} \text{ ….. Eqn. (4)}$$

Secondly, using the mean and standard deviation calculated above coefficient of variation is determined using the equation below

$$CoV = \frac{Sj}{|\underline{Xj}|} \text{ ….. Eqn. (5)}$$

Considering equal importance to each of entropy and coefficient of variation methods (Wang, 1999 and Liu et al., 2015) where $\sum Wi=1$; for i-th criteria/attribute, the combined weight is given by, $Wj_{combined} = 0.5.Wj_{Entropy} + 0.5.Wj_{COV}$ ……Eqn. (6)

3.3 Attraction Diversity Measurement of Tourist Destinations

A sustainable future for tourism business depends on uniquely inherent attractiveness, security and varied portfolio of site attractions and close proximity of pristine nature (Ariya et al., 2017). These destination attractions play an instrumental role in developing tourist loyalty towards the destination/site. A tourist's cognitive perceptual imagery about a given tourist site along with diverse site-specific attributes the tourist-pulling supply factor and the attitudinal behaviour of local residents towards the tourists constitutes the base of the tourist-destination's attractiveness (Dimitrov et al., 2017). A tourist destination's attraction diversity has three building blocks –

attraction variety, extent of attraction balance and attraction parity level to a given site (Sterling, 1998). For measuring such variance in destination attraction, the study employed the inverse of the Herfindahl-Hirschman Index (HHI) where a high value of HHI would indicate a decrease in diversity of the tourist site's attraction and vice versa. Owing to the operational difficulty in calculating revenues and market shares of individual site-specific attractions, Attraction Cluster Equity (ACE) serves as a better measure the valuation of an attraction type for a tourist destination better than market share (George et al., 2016) for assessing Attraction Diversity Index (ADI). To determine ACE, respondent-homestay tourists were asked to put their preference for various homestay-site specific relevant traffic-pulling attraction types for various sites within destinations under study and relative weights are computed using the equation below

$$RW_i = \frac{\sum \ Respondent's\ Score\ x\ Point-value}{No\ of\ Respondents\ x\ Maximum\ point-value} \ldots\ldots\ldots\text{Eqn (7)}$$

Then ACE is calculated using the expression below-

$$ACE_i = \frac{Weighted\ Score\ of\ k-th\ Attraction\ type}{\sum Weighted\ Scores\ of\ all\ k\ Attraction\ type} \ldots\ldots\text{Eqn (8)}$$

Using this ACE value for each type of i-th site-attractions, attraction-diversity index, ADI can be found for j-th destination using the equation (George et al., 2016),

$$\text{Attraction Diversity Index } (ADI_j) = 1/\sum (ACE_i)^2 \ldots\ldots\ldots\text{Eqn (9)}$$

3.4 TOPSIS Method

The Technique for Order Preference by Similarity to an Ideal Solution (TOPSIS) has established itself as a prominent tool in multi-criteria decision-making (MCDM) (Hwang & Yoon, 1981; Chen & Hwang, 1992) and is well-suited where multiple criteria and subjective preferences often play a role (Peng et al., 2022). This methodology was later implemented in other studies with its upgraded and expanded versions (Lai, Liu & Hwang, 1994). The three studies in the current decade (Tavana & Marbini, 2011; Hussain & Hussain, 2012; G. S. Da, 2015) depicted the usefulness of the TOPSIS tool in systematic multiple-attribute decision-making and priority development among

alternative tourist destinations. Simplicity and ease of Computation (Çelikbilek & Tüysüz, 2020), (Euclidean) Distance-Based Approach (Boran et al., 2009) and Flexibility and Adaptability (Shih et al., 2007) with various data types, handling missing values etc. are the core strengths of TOPSIS although it suffers majorly from Sensitivity to Outliers (Gómez-Gaspar et al., 2020) and Rank Reversal Issue (Wang, 2007) in strong correlations. TOPSIS can help researchers or tourism boards rank homestay destinations within a region or travel theme (Mardani et al., 2016) and Homestay-owners can utilize TOPSIS to prioritize investments based on guest preferences, identifying which aspects contribute most to satisfaction and distance from negative experiences (Çelikbilek & Tüysüz, 2020).

The underlying logic of TOPSIS is that the chosen alternative should have the shortest geometric (Euclidean) distance from the best solution or positive ideal solution and the longest geometric (Euclidean) distance from the worst solution or negative ideal solution (Behzadian et al., 2012; Zalewski & Wojciech, 2012). This tool provides a pretty comprehensive model which considers trade-offs between criteria when a poor-performing criterion gets cancelled by a good-performing one but does not exclude alternative solutions based on predefined thresholds. The key merit of TOPSIS is that it does not use pairwise comparisons and hence provides a more realistic modelling platform than non-compensatory methods, which include or exclude alternative solutions based on some cut-offs.

3.4.1 Brief algorithm of TOPSIS

1. Construction of a "Decision/Evaluation matrix" consisting of M alternatives and N criteria. Symbolically denoted as, $(a_{ij})_{M\times N}$ ..... (10)
2. Normalizing the Decision/Evaluation matrix found in step 1:

$$\alpha_{ij} = \frac{a_{ij}}{\sqrt{\sum_{i=1}^{M}(a_{ij})^2}} \text{ ..... (11)}$$

Each metric *j* for each homestay destination *i* is normalised to be in between 0 and 1. The higher its value the better is the metric.

3. Determining the weighted normalised decision matrix by multiplying each normalised metric from step 2 by corresponding Entropy-based weights provided that all of them will sum up to 1.
4. Calculation of the best and the worst alternative for each criterion by finding the maximum and minimum value of each criterion among all alternatives:

$$\chi_j^b = \max_{i=1}^{M} \chi_{ij}$$

$$\chi_j^w = \min_{i=1}^{M} \chi_{ij} \quad \text{..... (12).}$$

5. Determine the Euclidean-distance between the target alternative and the best/worst alternative:

$$d_i^b = \sqrt{\sum_{j=1}^{N} (\chi_{ij} - \chi_j^b)^2}$$

$$d_i^w = \sqrt{\sum_{j=1}^{N} (\chi_{ij} - \chi_j^w)^2} \quad \text{..... (13)}$$

6. Finally the TOPSIS Score is determined for each alternative by calculating similarity to the worst alternative and the TOPSIS score is found using the formula.

$$s_i = \frac{d_i^w}{d_i^w + d_i^b} \quad \text{..... (14)}$$

We compute a score for each company that is based on distances obtained in a step before.

7. Ranking of all the alternatives is made in descending order of TOPSIS score. The alternative with criteria closest to the best will obtain the highest score and ranking

4. Results

4.1 Demographic and Travel Behaviour Profile of Tourists

The demographic profile analysis (Table 2) shows major respondents are middle aged between 30 to 40 years (n=66, 32%) and the aged

people more than 50 years (n=20, 10%) and teenagers (n=16, 8%) were less. In terms of occupation, maximum were in service (n=74, 37%) though students (n=22, 11%) and housewives (n=27, 14%) were fair in number. Interestingly out of the all respondents maximum non-earning respondent tourists like job-seeker, student or housewives formed the majority (n=56, 28%) while there were low counts equally shared by very high earners of more than Rs 80000 (n=21, 11%) & low earners of less than Rs 50000 (n=21, 11%).

Table 2: *Demographic Data of Respondent-Tourists*

Demographic Factor	Description of Sub factor	Count (Percentage, %)
Gender	Male	102 (51%)
	Female	98 (49%)
Age Group	Less than 20 years	16 (8%)
	20 to 30 years	51 (26%)
	30 to 40 years	66 (32%)
	40 to 50 years	47 (24%)
	More than 50 years	20 (10%)
Educational Status	Basic Elementary Schooling	8 (4%)
	High School Passed	67 (34%)
	Studying	22 (11%)
	Graduate/Post Graduate	101 (51%)
Present Occupation	Student	22 (11%)
	Housewife	27 (14%)
	Jobseeker	12 (6%)
	Service	74 (37%)
	Self-employed	23 (12%)
	Professional	42 (21%)
Monthly Income	Not earning	56 (58%)
	Less than 50K	21 (11%)
	Rs 50 - 60K	32 (16%)
	Rs 60 - 70K	27 (14%)
	Rs 70 - 80K	34 (17%)
	More than Rs 80K	21 (11%)

Source: Field work

As per touring behaviour of the tourists (Table No 3), a substantial number of respondents were from other states of India (n=76, 38%) except West Bengal (n=124, 62%) and in respect of touring purpose,

the top two motives in list were quality time spending with family in vacation (n=59, 30%) followed by relaxing in ethnic hilly ambience (n=52, 26%). In terms of co-travelling partner, with family (n=103, 52%) was highest and next in line was with friends & colleagues (n=62, 30%) while being single (n=17, 8%) & under packaged tour (n=18, 9%) shared almost equal amount. Finally, regarding touring decision making though both self-decided (n=72, 35%) & family based (n=63, 32%) were in the top but social media & travel blogs (n=40, 20%) found to influence a lot in this respect.

Table 3: *Travel Behaviour of Homestay Tourist Boarders*

Demographic Factor	Description of Sub factor	Count (Percentage, %)
Coming from	West Bengal	124 (62%)
	Other Indian States	76 (38%)
Purpose of Visit	Aware of Local People & Ethnic Lifestyle of Hills	29 (15%)
	Only Enjoyment & Relaxation	36 (17%)
	For Enjoying Vacation & Adventure in Hilly Nature	24 (12%)
	Relaxation with Ethnic Ambience in Hills	52 (26%)
	Quality time spending with Family in nature	59 (30%)
Nature of Co-traveller	Friends, Colleagues	62 (31%)
	With Family/Relatives	103 (52%)
	Single	17 (8%)
	Packaged Tour	18 (9%)
Touring Decision Maker	Self	72 (35%)
	Family based	63 (32%)
	Suggestions	25 (13%)
	Social Media & Travel Blogs	40 (20%)

Source: Field work

4. 2 Mixed Weighting of Homestay Performance Attributes

Applying the procedural mechanism of Entropy based weight calculation using equation (1) to equation (6), it was found that out of all attributes 5 are playing major roles (Table No 4) which are Climate

& Scenic Beauty of Surrounding, Extent of Sight-seeing Opportunities, Good Quality Comfortable Fooding & Lodging with all Amenities, Maintenance of Overall Cleanliness, Hygiene, Proper Sanitation & COVID protocol and Cost of Fooding, Lodging & Customised on-site touring.

Table 4: *Combined/Mixed Weights of 15 Homestay Performance Attributes*

Homestay Destination Attributes/Performance Criteria	Weight
Climate & Scenic Beauty of Surrounding (C1)	0.0814
Extent of Sight-seeing Opportunities (C2)	0.0808
Distinctive Local Cultural, Ethnic, Religious & Historical Features & Attractions (C3)	0.0563
Good Quality Comfortable Fooding & Lodging with all Amenities (C4)	0.0824
Welcoming Attitude of Local Community to Tourists and 'Feel at home' staying ambience (C5)	0.0711
No and Density of Homestays (C6)	0.0348
Maintenance of Overall Cleanliness, Hygiene, Proper Sanitation and COVID protocol (C7)	0.0824
Chances of Various Hill sickness (Nausea/Vomiting, Vertigo, Hill Diarrhea, Fever etc) (C8)	0.0634
Risk of Natural Disaster- Landslide, In-transit road block due to rain/snowfall (C9)	0.0335
Scope of Hilly adventures (Nature-trailing, Trekking, Paragliding, River-Rafting etc) (C10)	0.0643
Availability of Nearby Shopping, Sporting & Recreational/ Cultural activities (C11)	0.0545
Road Condition, steep bends, Elevation & Navigability using Google Map (C12)	0.0756
Cost of Fooding, Lodging & Customised on-site touring (C13)	0.0848
Proximity of Health Clinic/Hospital & ATM (C14)	0.0626
Online Booking, cashless UPI based Payment mode (C15)	0.0719

Source: Author's Compilation

4.3 Determination of Homestay-site Attraction Diversity Index

From field-visit and past research, 18 types of Attraction categories were identified (Table 5) under three dimensions (Agarwal, 2007; Buckley, 2011; Bandyopadhyay, 2015; Choi & Sirakaya, 2010; Gössling, 2002; Kafle, 2012; Mason, 2010; Pearce, 2003; Singh, 2017; Sharma, 2018) from literature survey that play vital roles in selecting homestay site/destination for the two hill districts of West Bengal and Sikkim each. The relative weightages for each of i-th attraction-type (RWi) were computed (Table 9) using Eqn (7) based on respondents' 5-point Likert ratings.

Table 5: ***List of Various Attraction Types in Hilly Areas***

Sl	Attraction Type	Dimension	Relative Weightage	Rank
A 1	Mountain Peak (Kanchenjunga)	Natural	0.903	1
A 2	Mountain Falls		0.774	10
A 3	Natural Lakes in Hilly Terrain		0.809	8
A 4	River Valleys surrounded by hills		0.900	2
A 5	Natural Caves in Hills		0.427	18
A 6	Wildlife, Forest in Hills and Nature trailing		0.540	14
A 7	View Points, Sunrise/Sunset Points		0.898	3
A 8	Various sight-seeing opportunities		0.888	5
A 9	High Altitude Trekking	Adventure Activity	0.536	15
A 10	Paragliding		0.594	13
A 11	River rafting		0.511	16
A 12	Riverside camping in Hills		0.735	11
A 13	Cycle-Biking in Hills		0.453	17

A 14	Picturesque lodging Infrastructure and décor (Homestay)	Man made	0.879	6
A 15	Hygienic Food & Variety of Local Cuisines		0.878	7
A 16	On-site Entertainment & Relaxing Activities		0.660	12
A 17	Extent of Good Road Connectivity to the site		0.892	4
A 18	Affordable Total Cost of Vacation Trip		0.782	9

Source: Author's Compilation

It has been observed that, out of the major top 8 types of Attractions with more than 80 per cent weightage, 6 are purely natural (non-man-made) types viz. mountain peaks, river valley, viewpoints, sight-seeing chances, lodging location, natural lake and 2 are man-made i.e. road connectivity and hygienic food followed by the cost of the trip with 78.2 per cent importance. Hilly adventure activities were not of much concern to tourists. Next, for each of the four study sites of two neighbouring states, 'Attraction' type-wise weighted scores (Table 6a) were calculated which serve as inputs for determining ACE (Table 6b) and ADI scores (Table 11) using Eqn (8) and (9) respectively for each type for all study-sites. Considering the threshold value of ACE value ≥ 0.06 (Getz, 2015; Jamal & Stronza, 2009; Li et al., 2020), natural attractions play a major role in the sites of both Sikkim and West Bengal followed by attractive lodging infrastructure, road connectivity, hygienic food but cost factor was not found pertinent for Sikkim-bound homestay-tourists.

Table 6a: *Estimation of Weighted* Score *for 4 study-sites*

Relative weight	0.903	0.774	0.809	0.900	0.427	0.540	0.898	0.888	0.536	0.594	0.511	0.735	0.453	0.879	0.878	0.660	0.892	0.782
Criteria Dimension	Natural type of Attraction								Adventure type Attractions					Man-made (Non-Natural) type of Attraction				
Criteria No	C1	C2	C3	C4	C5	C6	C7	C8	C9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	C 17	C 18
Darjeeling	47.86	28.64	27.51	52.20	13.66	37.26	55.68	39.07	36.45	15.44	23.51	39.69	30.35	47.47	40.39	29.70	39.25	48.48
Kalimpong	51.47	49.54	33.98	49.50	15.37	38.34	59.27	46.18	27.87	38.61	31.68	42.63	28.99	51.86	43.02	34.98	42.82	53.18
East Sikkim	39.73	42.57	49.35	41.40	27.33	17.82	34.12	45.29	20.37	33.86	24.02	33.81	17.21	36.92	47.41	34.32	49.06	28.15
South Sikkim	41.54	34.06	50.97	36.90	29.04	14.58	30.53	47.06	22.51	30.89	23.00	30.87	14.04	39.56	44.78	33.00	47.28	26.59

Table 6b: *Estimation of Attraction Cluster Equity (ACE) Score for 4 study-sites*

Criteria Dimension	Natural type of Attraction								Adventure type Attractions					Man-made (Non-Natural) type of Attraction				
Criteria No	C1	C2	C3	C4	C5	C6	C7	C8	C9	C 10	C 11	C 12	C 13	C 14	C 15	C 16	C 17	C 18
Darjeeling	0.073	0.044	0.042	0.080	0.021	0.057	0.085	0.060	0.056	0.024	0.036	0.061	0.047	0.073	0.062	0.046	0.060	0.074
Kalimpong	0.070	0.067	0.046	0.067	0.021	0.052	0.080	0.062	0.038	0.052	0.043	0.058	0.039	0.070	0.058	0.047	0.058	0.072
East Sikkim	0.064	0.068	0.079	0.066	0.044	0.029	0.055	0.073	0.033	0.054	0.039	0.054	0.028	0.059	0.076	0.055	0.079	0.045
South Sikkim	0.070	0.057	0.085	0.062	0.049	0.024	0.051	0.079	0.038	0.052	0.039	0.052	0.024	0.066	0.075	0.055	0.079	0.045

Source: Author's Compilation

In order to identify relative diversity in homestay destination's attraction through ACE, weighted ACE scores for all attraction types for all sites were normalised and average ACE score was calculated for all 4 study sites (Table 7). Out of 4 study sites, Kalimpong ranked top in varied attraction-diversity followed by East Sikkim. Finally, destination region (state) Sikkim outperforms West Bengal in terms of homestay-site attraction diversification in the hills.

Table 7: *Post-normalised ACE and ADI Score for study-sites*

Sl	Attraction Type	Darjeeling	Kalim-pong	East Sikkim	South Sikkim
1	Mountain Peak (Kanchenjunga)	1.000	0.611	0.000	0.604
2	Mountain Falls	0.000	0.945	1.000	0.537
3	Natural Lakes in Hilly Terrain	0.000	0.088	0.859	1.000
4	River Valleys surrounded by hills	1.000	0.284	0.258	0.000
5	Natural Caves in Hills	0.005	0.000	0.830	1.000
6	Wildlife, Forest in Hills and Nature trailing	1.000	0.840	0.129	0.000
7	View Points, Sunrise/Sunset Points	1.000	0.850	0.107	0.000
8	Various sight-seeing opportunities	0.000	0.137	0.679	1.000
9	High Altitude Trekking	1.000	0.216	0.000	0.216
10	Paragliding	0.000	0.930	1.000	0.914
11	River rafting	0.000	1.000	0.373	0.364
12	Riverside camping in Hills	1.000	0.654	0.285	0.000
13	Cycle-Biking in Hills	1.000	0.683	0.179	0.000
14	Picturesque lodging Infrastructure (Homestay)	1.000	0.808	0.000	0.517
15	Hygienic Food & Variety of Local Cuisines	0.206	0.000	1.000	0.936
16	On-site Entertainment & Relaxing Activities	0.000	0.185	0.985	1.000
17	Extent of Good Road Connectivity to the site	0.105	0.000	0.982	1.000
18	Affordable Total Cost of Vacation Trip	1.000	0.921	0.023	0.000
Average ACE Score for Sites		0.518	0.508	0.483	0.505

Attraction Diversity Index (ADI) for j-th tourist destination = $[1/\sum (ACE_i)^2]$	0.1105	0.1401	0.1395	0.1280
Rank in Attraction Diversity	4th	1st	2nd	3rd
Destination Region (State) wise Mean Attraction Diversity Index (ADI) Score	0.1253		0.1338	

Source: Author's Compilation

4. 4 TOPSIS Evaluation

As per the algorithmic procedure of TOPSIS the decision matrix (Table 8) using equation (10) of all the attributes are calculated.

Table 8

Destination-wise *Decision Matrix for 15 Homestay Destination Attributes*

Homestay Performance Criteria No	Kalimpong	Darjeeling	Sikkim
C1	4.915	4.885	4.485
C2	4.870	4.835	4.295
C3	4.245	4.060	4.465
C4	4.250	4.195	3.975
C5	4.480	4.205	4.575
C6	4.705	3.680	2.870
C7	4.560	4.055	1.675
C8	3.325	2.930	3.245
C9	4.395	4.280	2.210
C10	4.815	4.410	4.340
C11	4.440	3.655	3.860
C12	4.050	3.750	3.415
C13	3.470	3.520	2.045
C14	3.480	2.935	2.955
C15	4.185	4.215	3.075

Source: Author's Compilation

Next, using the equation (11) of the TOPSIS Algorithm, the normalised decision matrix (Table 9) obtained is calculated.

Table 9: *Normalised Decision Matrix*

Homestay Performance Criteria No	Kalimpong	Darjeeling	Sikkim
C1	0.595	0.592	0.543
C2	0.602	0.597	0.531
C3	0.575	0.550	0.605
C4	0.592	0.585	0.554
C5	0.585	0.549	0.597
C6	0.710	0.555	0.433
C7	0.721	0.641	0.265
C8	0.605	0.533	0.591
C9	0.674	0.656	0.339
C10	0.614	0.562	0.554
C11	0.641	0.528	0.557
C12	0.624	0.578	0.526
C13	0.649	0.658	0.382
C14	0.641	0.541	0.544
C15	0.626	0.630	0.460

Source: Author's Compilation

Going further, the weighted normalised decision-matrix (Table 10) was found using Entropy-based weights of all criteria.

Table 10

Weighted Normalised Decision Matrix

Homestay Performance Criteria No	Kalimpong	Darjeeling	Sikkim
C1	0.048419	0.048541	0.044567
C2	0.048668	0.049018	0.043544
C3	0.032371	0.031497	0.034639
C4	0.048844	0.048212	0.045683
C5	0.041557	0.039006	0.042439
C6	0.024585	0.019300	0.014997

C7	0.059442	0.054248	0.022259
C8	0.038364	0.034686	0.037666
C9	0.022599	0.026354	0.019078
C10	0.039759	0.036137	0.035837
C11	0.034946	0.030047	0.031732
C12	0.045217	0.043694	0.038025
C13	0.047232	0.055828	0.034447
C14	0.040134	0.035939	0.036108
C15	0.045019	0.045342	0.033078

Source: Author's Compilation

The equation (12) of TOPSIS Algorithm was used to determine the best (Positive Ideal) and the worst (Negative Ideal) alternative (Table 11) for each criterion.

Table 11: *Positive (Best) & Negative (Worst) Ideal Cases*

Criteria No	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
Positive Ideal	0.049	0.049	0.035	0.049	0.042	0.025	0.059	0.035	0.019	0.040	0.035	0.038	0.034	0.040	0.045
Negative Ideal	0.045	0.044	0.031	0.046	0.039	0.015	0.022	0.038	0.026	0.036	0.030	0.045	0.056	0.036	0.033

Source: Author's Compilation

Table 12: *Relative Closeness to Idea Solution*

	Kalimpong	Darjeeling	Sikkim
Positive/Best Ideal Solution Value	0.0462	0.0519	0.0650
Negative/Worst Ideal Solution Value	0.0386	0.0436	0.0526

Source: Author's Compilation

Finally, the calculation of the final TOPSIS score and ranking of the preferred homestay destination (Table 13) was made using similarity to the worst alternative in terms of TOPSIS scores using equation (14).

Table 13: *Final TOPSIS Score & Ranking of Preferred Homestay Destination*

	Kalimpong	Darjeeling	Sikkim
Positive + Negative Ideal Solutions	0.0849	0.0955	0.1176
TOPSIS Score = Negative Ideal Solution /(Sum of Positive+Negative Ideal)	0.4552	0.4562	0.4471
Tourists Preferential Ranking	2nd	1st	3rd

Source: Author's Compilation

The TOPSIS method shows that very tough competition is prevailing among the three homestay destinations in pulling the traffic of nature-loving hill-bound tourists since the TOPSIS score indicates a very marginal difference among the three locations, although numeric ranking Darjeeling is at the top just 0.0010 and 0.0091 point score ahead of Kalimpong & Sikkim respectively.

4.4 Paired t-test for identifying significant difference in homestay tourist's preference

The Normality tests, Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) for the attribute-wise data values (Table 5) was carried out and the result indicated presence of normality of the data for all three locations (Kalimpong: KS 0.160, SW: 0.905, df 15 & $p>0.05$; Darjeeling: KS 0.156, SW: 0.944, df 15 & $p>0.05$; Sikkim: KS 0.150, SW: 0.921, df 15 & $p>0.05$). Visual inspection of Histograms of all pairs of locations also indicated that the normality assumption was not violated. Therefore paired t-test was conducted to assess any significant differences in attribute-wise mean scores for three Homestay locations using SPSS V.20.

Table 14: *Paired Sample t - test among 3 Homestay Study-Destinations*

Pair Between Mean Values of Homestay Attributes	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std Dev	Std Err Mean	95% Confidence Interval for the difference				
				lower	upper			
Pair 1: Kalimpong and Darjeeling	.30500	.31227	.08063	.13207	.47793	3.783	14	.002
Pair 2: Kalimpong and Sikkim	.84667	.88118	.22752	.35869	1.3346	3.732	14	.002
Pair 3: Darjeeling and Sikkim	.54167	.87584	.22614	.05664	1.0266	2.395	14	.031

Source: Author's Compilation

The result of the paired sample t-test with α of 0.05 (Table 14) for comparing mean ratings on 15 attributes between three homestay destinations under study revealed that, for every pair of homestay destinations there exist significant statistical differences of mean tourist preference with large effect as between Kalimpong and Darjeeling t (14) = 3.783, p < 0.05, two-tailed (Cohen's d = 0.976). For other paired locations between Kalimpong and Sikkim t (14) = 3.732, p<0.05, two-tailed (Cohen's d = 0.961) and Darjeeling and Sikkim, *t(14)* = 2.395, *p<0.05*, two-tailed with medium effect (Cohen's d = 0.618).

5. Discussions

In line with earlier research of literature (Buhalis, 1999), the utility of the 6As framework in prioritising and competitive ranking of three study destinations in terms of attractiveness and tourist preference for homestay destinations among two hilly districts of West Bengal and Sikkim each has been proved successful in this study with little modifications in dimensional terms of 6As framework. This study in compliance with past studies demonstrated that as the popularity of homestays grows, so does the competitive landscape (Sigala, 2018). Like earlier studies (Mardani et al., 2016; Çelikbilek & Tüysüz, 2020) using a multi-criteria based decision-making tool, TOPSIS in this present study has brought out a nice overview of homestay- tourism destination evaluation among the four study regions. The study

also supports some conclusions of earlier tourism studies (Tavana and Marbini, 2011; Hussain and Hussain, 2012) in identifying the loopholes lacunas present in the homestay tourists like. The present research has recognised past literature findings (G. S. Da, 2015) on the identification of closest competitors in chalking out strategies to increase tourist footfall for any homestay destinations like Sikkim started giving a competitive edge to Bengal for having relatively high attraction-diversity (0.1338) than Bengal (0.1253) which acts as traffic-pulling factor in beckoning more tourists and such an intensified competition in the homestay sector necessitates strategic differentiation (Kim et al., 2019).

6. Conclusions

The present study portraying the competitive scenario of homestay-based tourism in the Hills of Darjeeling, Kalimpong and Sikkim has brought about many significant outcomes. Firstly, the mixed weight mechanism reveals, in homestay tourists' priority ladder 5 attributes play dominating roles in generating post-stay satisfaction or dissatisfaction, which are Climate and Scenic Beauty of Surrounding, Extent of Sight-seeing Opportunities, Good Quality Comfortable Fooding and Lodging with all Amenities, Maintenance of Overall Cleanliness, Hygiene, Proper Sanitation and COVID protocol and Cost of Fooding, Lodging & Customised on-site touring. Secondly, in terms of tourist-site attraction-diversity Sikkim is in a better position in pulling tourists than Bengal for having a relatively high attraction-diversity index. Thirdly, the TOPSIS tool has identified a very tight competitive scenario of homestay-based tourism in the hills of Darjeeling, Kalimpong and Sikkim in pulling the traffic of nature-loving hill-bound tourists as their TOPSIS score indicates a very small difference among the locations, although numeric ranking wise Darjeeling is marginally ahead of Kalimpong and Sikkim respectively. Finally, the paired t-test, for every pair of homestay locations manifests that there exist highly significant statistical differences in mean tourist preference between Kalimpong Sikkim & Darjeeling while medium statistically significant differences in mean tourist preference between Darjeeling & Sikkim. In a general sense, this study has great significance to the homestay owners, beneficiary community of any similar tourist-destination context

and tourism department having the potential to flourish homestay-based tourism to chalk out a strategic game plan to promote as well as counteract rivalry among the existing homestays to stay ahead of heavy competitors.

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There are no competing interests to declare for this research study.

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Ethics Statement

This research study did not need ethical approval from the appropriate body concerned.

AUTHOR'S DECLARATION

We do hereby declare that the research article titled "A Comparative Study on Tourist Preference for Homestay Destinations among Darjeeling, Kalimpong and Sikkim" is absolutely our own work genuinely based on first hand primary data collected by myself from

the Study Area – Darjeeling Hills. No part and/or calculation of this paper is taken from any other research works and nor submitted elsewhere.

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