



An Appraisal of Tourism Infrastructure in Himachal Pradesh, India

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Abstract

Tourism infrastructure is a primary key to tourism development in a destination region and also a product of regional development based on the utilization of existing destination resources. The nature of tourism attractiveness and development varies in different destination region based on the level of competitiveness of tourism infrastructure. This paper deals with the methodological aspect of calculation of tourism infrastructure development index (TIDI) in a different district of Himachal Pradesh based on modified human development index (HDI) method and also composite Z-score method. The comparative methodological analysis carried out in this article to judge the level of tourism infrastructure in Himachal Pradesh. Based on available secondary sources of tourism infrastructure data, tourism infrastructure development index carried out and result reveals the fact that there exists spatial differentiation of tourism infrastructure in different districts in the state. The nature of the development of tourism and its infrastructure varies according to the nature of the physiographical and socio-cultural environment in the destination region

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Introduction

There exists a positive relationship between tourism infrastructure and tourism development (Adobayo & Iweka, 2014). The infrastructure of tourism is the key to tourism development and also the basis of best utilization of tourism resources in a destination region. Tourism infrastructure includes transportation, accommodation and catering, healthcare, basic public infrastructural facilities and quality of services provided therein. So tourism infrastructure is the component of regional tourist product and a critical determinant of tourism destination competitiveness. The tourism infrastructure categorized into different forms i.e. Social infrastructure, Transportation Infrastructure, and Environmental infrastructure. Where transport infrastructure indicates the access to the destination region for both national and international tourist by Air, Road, Railway, and waterways. Social infrastructure includes the accommodation, religious sites, galleries, convention centers and other basic facilities to the tourist. And Environmental infrastructure includes natural environmental quality and scenic beauty, wildlife, and protected areas and parks.

Ionel (2013) advocates five elements of tourism infrastructure i.e. i) Accommodation and catering structure to house tourist; ii) Elements like landscape, culture, and history, which increases the attractiveness of a location; iii) Communication infrastructure which includes transport and

telecommunications; iv) Civic elements like hospitality, civic education, and aesthetics and v) Recreational and leisure facilities such as sport complexes, art fairs etc. Tourism infrastructure components play a vital role in the development of tourism in a destination region. These components described by different scholars in a different manner. Cooper et al (2008) identifies four A's of tourism i.e. Attractions, Accommodation, Accessibility and Amenities etc. whereas Ann Harlt (2002) discusses five A's of tourism i.e. Accessibility, Attractions, Accommodation, Amenities, and Ancillary service etc. and IATA (2015) states five A's of tourism i.e. Accommodation, Accessibilities, Activities, Amenities, and Attractions etc. which are crucial for successful destination.

Based on the above explanation Haneef, S.K. (2017) discusses four elements of tourism infrastructure i.e. Attraction infrastructure, Accommodation infrastructure, Accessibility infrastructure, and amenities infrastructure etc. Attractions basically include an object, person, place or concept which tourist have to see or do, but also service facilities (Lewis, 1987). So attractions are basically natural, cultural or special types. Swarbrooke (1995) identifies attractions into four types i.e. natural, man-made but not original designed primarily to attract visitors, man-made and purpose build to attract visitor & special events. Destination attractions are the driving force of generating tourist demand



(Uysal, 1998) and the primary determinant of measuring destination attractiveness (Hu & Ritchie, 1993; Formaica, 2000). Accommodation service represents a basic tourist service and a fundamental element of the tourism industry and its development (Urtasun & Gutierrez, 2006). The nature of accommodation facilities and quality of food is a significant component of tourist image about the destination (Banerjee, 2014). The accommodation sectors can be primary and supplementary and also commercial and non-commercial accommodation. Accessibility from source to destination is a key infrastructure of the tourism industry and its development. Transportation infrastructure is an essential component for the creation of new attraction and the growth of existing destination or the development of tourism in a region (Kaul, 1985). So the tourism planning and development is not possible without accessibilities i.e. roads, rail, airports, harbors, electricity, sewage, communication networks and portable water (Crouch & Ritchie, 1999). Amenities are a basic or subsidiary factor of the tourist destination and these factors are necessary for offering a satisfactory tourist experience (Lewis, 1987; Baker & Crompton, 2000; Nowacki, 2005). So lack of tourism amenities is a major obstacle to tourism development and also the investment in a destination. Raina, A. (2005) divided the component of tourism infrastructure broadly into four division i.e. physical, cultural, services, and governance etc. Where physical component includes hotel, motel, transportation, restaurants, communications, water, and electricity; cultural components includes culture, heritage fairs, and festivals, local art, and music, dresses, and dance, language, and food; services include banking facilities, travel agencies and tourist guide and governance includes the law and order machinery, customs, and immigration.

The Study Area

Himachal Pradesh is located in the lap of northwestern Himalayas characterized by highly dissected mountain ranges interspersed with deep gorges and valleys, beautiful landscape, green forest, streams, meadow, lakes, snow clad mountain and ethnic community with their indigenous culture. In terms of absolute location Himachal Pradesh located in between 30°22'N to 33°13' N latitude and 75°36'E to 79°02'E longitude covering an area of about 55673 square kilometers. In terms of administrative location the state is bounded by Jammu and Kashmir in the north, Tibet in the east, Uttarakhand in the southeast, Haryana in the south and Punjab in the west. The state based on its physiographic characteristics broadly divided into three physiographic zones i.e. the Siwaliks or outer Himalaya, Lesser Himalaya or mid-mountain and Greater or Trans Himalaya (Marh, 2000). The general slope increases from west to east and south to north where elevation increases from 350 m in the Punjab Plain in the west to 6816 m in Zaskar range in the east in Kinnaur. The mountain ranges i.e. Siwaliks range, Dhauladhar range, PirPanjal range, Greater Himalayan range and Zaskar range etc. spread in the state from west to east direction. In terms of climatic characteristics, the state broadly divided into five climatic zones i.e. sub-tropical, warm temperate, cool

temperate, cold high mountain and snow fridge zone (State Environment Report, HP). Due to its topography, climatic condition, river, biodiversity, the culture of local people, society, landscape beauty, snow-clad peak visibility, mountain meadows, lush green forest, national parks, and wildlife sanctuary etc. the state attracts tourist from different parts of the country and also from abroad. Due to the differentiation in geo-environmental and climatic condition, cultural festivals, promotion by the government and infrastructural facilities to the tourist, Himachal Pradesh over the period of time observed an increasing number of tourist. Himachal Pradesh received a large number of tourist due to its wide range of tourist attractions and tourism opportunities. The arrival of both domestic and international tourist plays a major role in the state's economy. Due to this, to attract much more tourist in the state the provision of better infrastructural facilities to the tourist is the primary task of the government for the development of tourism in Himachal Pradesh.

Objectives

The objective of this paper is to estimate Tourism Infrastructural Development index and also to represent the spatial pattern of tourism infrastructure in different districts of Himachal Pradesh.

Database and Methodology

To understand the qualitative status of tourism in Kullu District as well as Himachal Pradesh 14 elements i.e. guest house and homestay, restaurants, total room, bed capacity, travel agency, tourist guide, road length, road density, bank, ATM facility and tourism opportunities etc. belonging to accommodation, transportation and communication has been taken into consideration. The data has been collected from the Department of Economics and Statistics, Himachal Pradesh as per availability. Tourism infrastructure development index (IDI), a composite index has been calculated based on modified HDI normalization methodology and also composite Z-Score method for comparative analysis.

Discussion and Results

Infrastructure Development Index

The nature of infrastructure for tourism development varies place to place depending upon the physical, social, cultural, economic and environmental condition in different districts of Himachal Pradesh. The collected information of 14 infrastructural elements has been taken into consideration for this analysis.

The raw data has been normalized based on the following equation:

$$\text{Normalized Value} = \frac{(x - x_n)}{(x_m - x_n)}$$

Where, x = individual value, x_m = maximum value and x_n = minimum value.

The normalized value (N) ranges between 0 and 1, where 0 indicates low intensity and 1 indicates high intensity.

The composite infrastructure development index (IDI) is then computed as:

$$IDI = \frac{\sum (NW_1 + NW_2 + NW_3 + \dots + NW_n)}{N}$$



where IDI = infrastructure development index, NW = normalized weight of individual elements and N is the number of elements (14). The result of composite IDI has been classified into five classes resembling very high, high, moderate, low and very low based on the nature of concentration of development of tourism.

The map prepared shows the spatial distribution of IDI (TIDI) value in Himachal Pradesh (Fig.2). The Shimla and Kangra district belongs to very high development region where Shimla district due to capital district and popular tourist destination and promotion in both national and international market fall in this category whereas in Kangra district, the maximum portion of the district falls under low slope land and popular tourist destinations indicate such result. Kullu district falls under the highly developed region in terms of tourism infrastructure. But the infrastructure mainly concentrated on Beas and Parbati valley region basically the northern portion of the district. Mandi district also falls under high infrastructure categories. A moderate degree of development of tourism infrastructure founds in Solan district because of its attractive tourist spots. Whereas, the low concentration of tourism infrastructure found in Chamba, Una, Hamirpur, Bilaspur, and Sirmour district. Due to its extreme environmental and terrain condition, the districts like Lahul&Spiti and Kinnaur have very low tourism infrastructure.

The nature of tourism infrastructure has also been judged using composite Z-Scores (Table - 3) as:

$$Z_i = \frac{(x_i - \bar{x})}{\sigma}$$

The infrastructural development index map has been prepared based on the composite Z score values (Fig.3). The scores have been further categorized into five groups i.e. very high, high, moderate, low and very low development of tourism infrastructure. The map shows that the district Shimla and Kangra hold very high development index, Kullu district represents a high status of tourism infrastructure. Solan and Mandi's district represent Moderate degree of an infrastructure of tourism. The district like Chamba, Una, Bilaspur, Hamirpur, and Sirmour have low tourism infrastructure and Lahul&Spiti and Kinnaur districts characterized by very low level of tourism infrastructure.

Conclusion

Tourism development needs more intensive investment in modernization tourism and related other infrastructural which helps regional development in the destination. There exists more or less same result of infrastructural development index in all districts of Himachal Pradesh using modified HDI method and composite Z score method. The result only varies in case of Mandi district. So, the analysis of tourism infrastructure development index is acceptable. The higher development of tourism infrastructure is the reflection of increasing efficiency of production and provision of tourism services. The popular destinations in different parts of Himachal Pradesh facilitate through all tourism-related infrastructural attribute but the remote part of the regions faces lack of basic infrastructural as well as tourism infrastructural facilities. The harsh physiographic and climatic characteristics are responsible for the lack of development of tourism infrastructure in different districts of Himachal Pradesh. So the

provision of both quantitative and qualitative infrastructural facilities to the tourist in the destination region should increase tourist arrival in near future in the state which helps to encourage tourism-related economic opportunities and also micro-level regional economic development in the destination region. So, the provision of infrastructural facilities by the government, NGO and local government should attract more tourist and the community participation leads towards sustainable tourism development in the districts in Himachal Pradesh.

References

1. Adobayo, K.A., Iweka, C.O.A. (2014). Optimizing the Sustainability of Tourism Infrastructure in Nigeria through Design for Deconstruction Framework, *American Journal of Tourism Management*, 3(1A), pp. 13-19.
2. Baker, D.A. and Crompton, J.L. (2000). Quality, satisfaction and behavioral intentions, *Annals of Tourism Research*, 27(3), pp-785-804
3. Banerjee, D. (2014). Hospitality and its importance to the Tourism Industry: A case study on selected hotels in Kolkata, *IJFMS*, 1(1).
4. Cooper, C., J. Fletcher, A. Fyall, D. Gilbert and S. Wanhill (2008). *Tourism Principles and Practices*. Essex: Pearson Education Limited, Fourth Edition
5. Crouch, G.I. and Ritchie, J.R.B. (1999). Tourism competitiveness and societal prosperity, *Journal of Business Research*, 44(3), pp-137-152
6. Formica, S. (2000). Destination attractiveness as a function of supply and demand interaction. Unpublished doctoral dissertation, Virginia Polytechnic Institute, and State University, Blacksburg
7. Haneef, S.K. (2017). A model to explore the impact of tourism infrastructure on destination image for effective tourism marketing, Unpublished doctoral dissertation, School of the Built Environment, University of Salford, UK
8. Harlt, A. (2002). Developing marketing strategies for tourism destination in peripheral areas of Europe: The case of Bornholm, Unpublished doctoral thesis, Bournemouth University.
9. Hu, Y, and Ritchie, J.R.B. (1993). Measuring destination attractiveness: Acontextual approach, *Journal of Travel Research*, 32(2), pp-25-34
10. International Air Transport Association (2015). *IATA foundation in travel and tourism*, International Travel and Tourism Training Programme, Ed.5.14
11. Ionel, B. (2013). The factors appearance and development of rural tourism, *Annals of the University of Oradea, Economic science series*, pp-750-758
12. Jovanovic, S. & Illic, I. (2016). Infrastructure as an important determinant of tourism development in the countries of southeast Europe, *Ecoforum*, 5(1), pp- 288-293
13. Kaul, R.N. (1985). *Dynamics of tourism: A trilogy*, Transportation and Marketing, New Delhi, vol-111
14. Lewis, R.C. (1987). The measurement of gaps in the quality of hotel services, *International Journal of*



- Hospitality Management, 6(2) pp- 83-88
15. Nowacki, M.M. (2005). Evaluating a museum as a tourist product using the servqual method, *Museum Management, and Curatorship*, 20, pp-235-250
 16. Panasiuk, A. (2007). Tourism infrastructure as a determinant of regional development, *Ekonomica ir vadyba: aktualios ir perspektyvos*, 1(8), pp-212-215
 17. Raina, A. (2005) *Ecology, Wildlife, and Tourism Development: Principles, Practices and Strategies*, Sarup & Sons, Delhi.
 18. Swarbrooke, J. (1995). *The development and management of visitor attractions*, Oxford: Butterworth Heinemann
 19. Urtasun, A. & Gutierrez, I. (2006). Hotel location in tourism cities Madrid 1936-1998, *Annals of Tourism Research*, 33(2), pp- 382-402
 20. Uysal, M. (1998). The determinant of tourism demand: A theoretical perspective. In Loannides, D., and Debbage, K.G. (ed.), *the economic geography of the tourist industry*, Routledge, London.

Table 1: Attributes for Tourism Infrastructural Development Index

Districts	Area (sq km)	Guest Houses & Home Stay Units	Restaurants	Total Room	Bed Capacity	Travel Agencies	Tourist Guides	Road Length (km)
<i>Bilaspur</i>	1167	71	13	651	1398	21	28	1701
<i>Chamba</i>	6528	172	29	1871	3840	30	88	3257
<i>Hamirpur</i>	1118	35	27	305	568	4	1	1893
<i>Kangra</i>	5739	433	90	4762	9751	205	66	5951
<i>Kinnaur</i>	6401	92	7	950	1865	13	1	1060
<i>Kullu</i>	5503	685	73	10715	22974	905	279	1907
<i>Lahaul & Spiti</i>	13835	78	14	685	1462	18	0	1256
<i>Mandi</i>	3950	174	43	1639	3478	67	54	5667
<i>Shimla</i>	5131	450	124	6883	13772	742	331	5405
<i>Sirmour</i>	2825	95	52	1112	1985	6	55	3062
<i>Solan</i>	1936	254	102	3899	8427	62	64	2961
<i>Una</i>	1540	65	12	643	1349	7	0	1929
Data Year		2015	2015	2015	2015	2015	2015	2015

Table - 1 continues.....

Districts	Road Density	No of Banks	Bank Facilities	No. of ATMs	Crime	No of Popular Tourist Spots	No of Ayurveda Institution
<i>Bilaspur</i>	1.46	78	103	93	1281	12	69
<i>Chamba</i>	0.50	81	99	54	955	13	103
<i>Hamirpur</i>	1.69	103	137	116	875	7	73
<i>Kangra</i>	1.04	278	374	272	3225	16	233
<i>Kinnaur</i>	0.17	30	48	30	211	7	28
<i>Kullu</i>	0.35	91	118	104	1200	12	66
<i>Lahaul & Spiti</i>	0.09	15	22	13	125	12	22
<i>Mandi</i>	1.43	182	223	171	2377	16	166
<i>Shimla</i>	1.05	228	278	230	2833	16	150
<i>Sirmour</i>	1.08	94	115	96	1117	4	79
<i>Solan</i>	1.53	190	205	243	865	11	78
<i>Una</i>	1.25	105	137	118	1380	10	72
Data Year	2015	2015	2014	2014	2015	2015	2013

Source: Department of Economics and Statistics, HP



Table - 2: Normalized Value of 14 Infrastructures of HP Tourism

Districts	Normalization Value based on HDI														Infrastructure Development Index
	Guest Houses & Home Stay Units	Restaurants	Total Room	Bed Capacity	Travel Agencies	Tourist Guides	Road Length (km)	Road Density	No of Banks	Bank Facilities	No of ATMs	Crime	No of Popular Tourist Spots	No of Ayurveda Institution	
Bilaspur	0.0554	0.0513	0.0332	0.0370	0.0189	0.0846	0.1311	0.8528	0.2395	0.2301	0.3089	0.3729	0.6667	0.2227	0.2361
Chamba	0.2108	0.1880	0.1504	0.1460	0.0289	0.2659	0.4492	0.2545	0.2510	0.2188	0.1583	0.2677	0.7500	0.3839	0.2660
Hamirpur	0.0000	0.1709	0.0000	0.0000	0.0000	0.0030	0.1703	1.0000	0.3346	0.3267	0.3977	0.2419	0.2500	0.2417	0.2241
Kangra	0.6123	0.7094	0.4281	0.4098	0.2231	0.1994	1.0000	0.5901	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.7266
Kinnaur	0.0877	0.0000	0.0620	0.0579	0.0100	0.0030	0.0000	0.0468	0.0570	0.0739	0.0656	0.0277	0.2500	0.0284	0.0550
Kullu	1.0000	0.5641	1.0000	1.0000	1.0000	0.8429	0.1732	0.1597	0.2890	0.2727	0.3514	0.3468	0.6667	0.2085	0.5625
Lahaul&Spiti	0.0662	0.0598	0.0365	0.0399	0.0155	0.0000	0.0401	0.0000	0.0000	0.0000	0.0000	0.0000	0.6667	0.0000	0.0660
Mandi	0.2138	0.3077	0.1281	0.1299	0.0699	0.1631	0.9419	0.8384	0.6350	0.5710	0.6100	0.7265	1.0000	0.6825	0.5013
Shimla	0.6385	1.0000	0.6319	0.5893	0.8191	1.0000	0.8884	0.6007	0.8099	0.7273	0.8378	0.8735	1.0000	0.6066	0.7874
Sirmour	0.0923	0.3846	0.0775	0.0632	0.0022	0.1662	0.4093	0.6195	0.3004	0.2642	0.3205	0.3200	0.0000	0.2701	0.2350
Solan	0.3369	0.8120	0.3452	0.3508	0.0644	0.1934	0.3887	0.8977	0.6654	0.5199	0.8880	0.2387	0.5833	0.2654	0.4678
Una	0.0462	0.0427	0.0325	0.0349	0.0033	0.0000	0.1777	0.7249	0.3422	0.3267	0.4054	0.4048	0.5000	0.2370	0.2342

Table - 3: Z-Scores of Normalized Value of 14 Infrastructures of HP Tourism

Districts	Z-Score														Composite Z Score
	Guest House & Homestay Units	Restaurants	Total Room	Bed Capacity	Travel Agencies	Tourist Guides	Road Length (km)	Road Density	No of Banks	Bank Facilities	No of ATMs	Crime	No of Popular Tourist Spots	No of Ayurveda Institution	
Bilaspur	-0.720	-0.904	-0.684	-0.665	-0.490	-0.479	-0.744	0.873	-0.564	-0.421	0.173	-0.097	-0.429	-0.449	-5.600
Chamba	-0.222	-0.501	-0.304	-0.305	-0.461	0.068	0.144	-0.845	-0.527	-0.885	0.433	-0.449	0.134	0.140	-3.578
Hamirpur	-0.897	-0.551	-0.793	-0.787	-0.545	-0.725	-0.634	1.296	-0.250	-0.147	-1.127	-0.536	-0.363	-0.379	-6.439
Kangra	1.065	1.039	0.599	0.567	0.102	-0.133	1.683	0.119	1.948	1.711	1.214	2.006	2.288	2.390	16.597
Kinnaur	-0.616	-1.056	-0.591	-0.596	-0.516	-0.725	-1.110	-1.442	-1.167	-1.171	-1.127	-1.254	-1.109	-1.158	-13.638
Kullu	2.307	0.610	2.458	2.518	2.355	1.809	-0.626	-1.118	-0.401	-0.290	0.173	-0.184	-0.479	-0.500	8.632
Lahaul&Spiti	-0.685	-0.879	-0.674	-0.656	-0.500	-0.735	-0.998	-1.576	-1.356	-1.373	0.173	-1.347	-1.208	-1.262	-13.075
Mandi	-0.212	-0.147	-0.376	-0.358	-0.342	-0.242	1.521	0.832	0.742	0.508	1.214	1.089	1.178	1.230	6.635
Shimla	1.149	1.897	1.262	1.160	1.831	2.283	1.371	0.149	1.320	1.211	1.214	1.582	0.913	0.953	18.292
Sirmour	-0.601	0.080	-0.541	-0.578	-0.539	-0.233	0.033	0.204	-0.363	-0.385	-1.907	-0.274	-0.264	-0.275	-5.644
Solan	0.182	1.342	0.330	0.372	-0.358	-0.151	-0.025	1.002	0.843	1.365	-0.087	-0.546	-0.280	-0.293	3.696
Una	-0.749	-0.929	-0.687	-0.672	-0.535	-0.735	-0.614	0.506	-0.225	-0.123	-0.347	0.010	-0.380	-0.397	-5.877

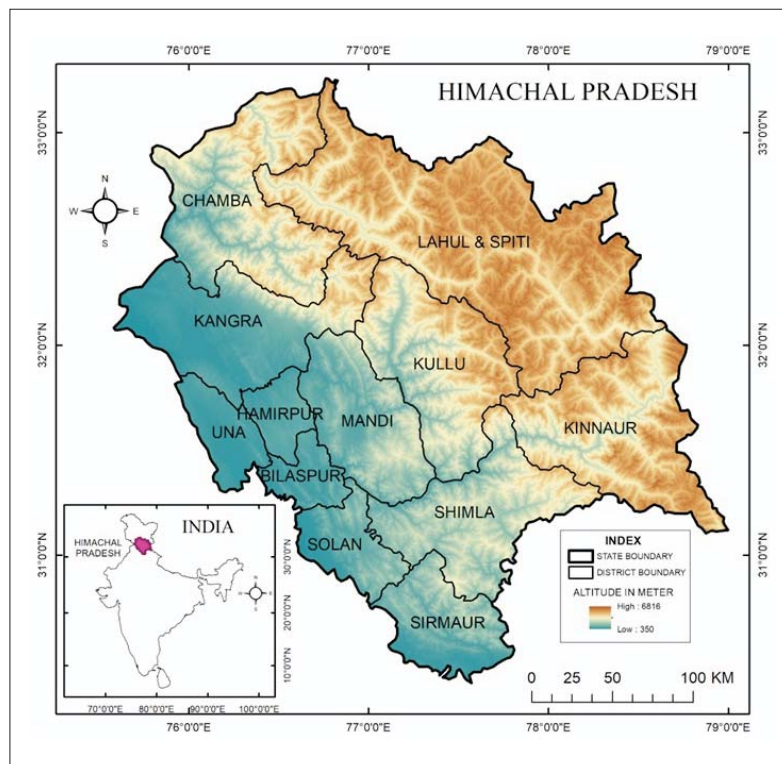


Fig. 1: Location of the Study Area

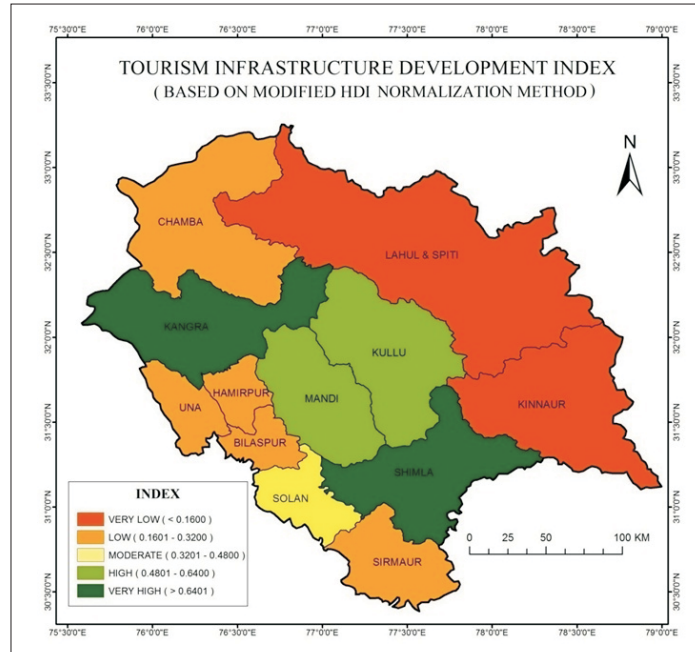


Fig. 2: Tourism Infrastructure Development Index Map of Himachal Pradesh based on modified HDI method

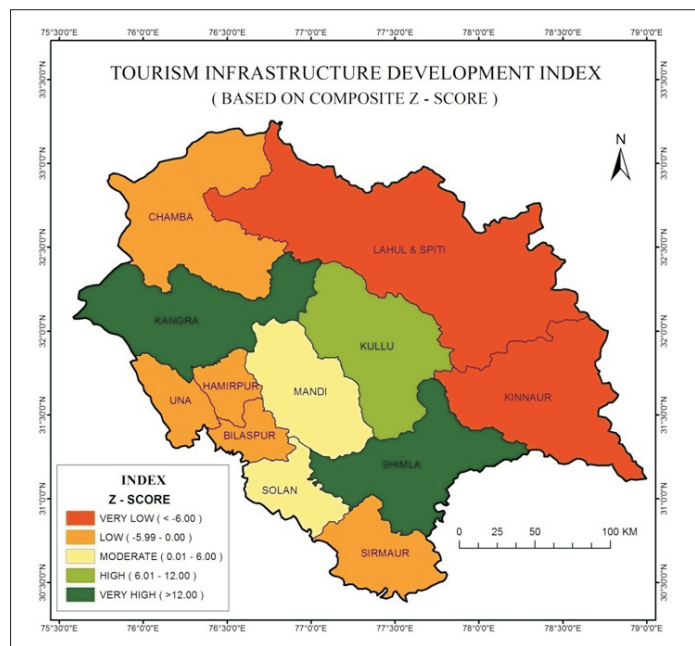


Fig. 3: Tourism Infrastructure Development Index Map of Himachal Pradesh based on Composite Z - Score Values



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