https://doi.org/10.52326/jss.utm.2025.8(1).08
UDC 330.59:364.; 2(540)

BEYOND THE MOUNTAINS: UNVEILING THE EASE OF LIVING IN THE HIMALAYAN STATE OF UTTARAKHAND IN INDIA

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Received: 02. 05. 2025
Accepted: 03. 12. 2025

Abstract. This paper challenges the conventional equation of economic prosperity with human well-being and explores alternative parameters for assessing the ease of living in the Himalayan state of Uttarakhand in India. Recognizing the limitations of relying solely on economic indicators like GDP, the study examines access to basic amenities and public services across different districts of the state. Contrary to the prevailing narrative of "lack of facilities" driving out-migration from the mountainous districts, the analysis reveals that these regions may offer a comparable, if not superior, quality of life in certain aspects, particularly concerning healthcare and infant mortality rates. This finding underscores the need for a more holistic approach to development that prioritizes human well-being in its entirety, encompassing access to healthcare, education, transportation, and essential infrastructure. By examining well-being indicators beyond economic metrics, this research aims to unveil a more nuanced understanding of the ease of living in Uttarakhand and inform policy decisions that promote sustainable development, reduce out-migration pressures, and improve the quality of life for all residents, ultimately contributing to a more balanced and equitable society.

Keywords: *Himalaya, Uttarakhand, Human well-being, Ease of living.*

Rezumat. Această lucrare abordează ecuația convențională a prosperității economice cu bunăstarea umană și explorează parametrii alternativi pentru evaluarea ușurinței de a trăi în statul Himalayan Uttarakhand din India. Recunoscând limitările de a se baza exclusiv pe indicatori economici precum PIB-ul, studiul examinează accesul la facilități de bază și servicii publice în diferite districte ale statului. Spre deosebire de narațiunea predominantă despre „lipsa facilităților" care provoacă emigrarea din raioanele muntoase, analiza arată că aceste regiuni pot oferi o calitate a vieții comparabilă, dacă nu superioară, în anumite aspecte, în special în ceea ce privește asistența medicală și ratele mortalității infantile. Această constatare subliniază necesitatea unei abordări mai holistice a dezvoltării, care să acorde prioritate bunăstării umane în întregime, cuprinzând accesul la asistență medicală, educație,

transport și infrastructură esențială. Prin examinarea indicatorilor de bunăstare dincolo de metricile economice, această cercetare își propune să dezvăluie o înțelegere mai nuanțată a ușurinței de a trăi în Uttarakhand și să informeze deciziile politice care promovează dezvoltarea durabilă, reduc presiunile de migrație și îmbunătățesc calitatea vieții pentru toți rezidenții, contribuind în cele din urmă la o societate mai echilibrată și mai echitabilă.

Cuvinte cheie: *Himalaya, Uttarakhand, bunăstare umană, ușurință de a trăi.*

1. Introduction

Growth and development are often considered synonymous with human well-being, leading to the acclaim of materialistic achievements as contributors to human satisfaction and happiness. Consequently, assessments of human well-being often prioritize economic data, with decisions frequently based on GDP or the size of the economy.

However, this approach may not accurately reflect the overall quality of life or well-being of the population. This paper challenges the notion that economic prosperity alone equates to human well-being and explores alternative parameters for assessing the ease of living or well-being of the masses in the Himalayan state of Uttarakhand in India that shares international boundary with China to the north and Nepal to the east (Figure 1).

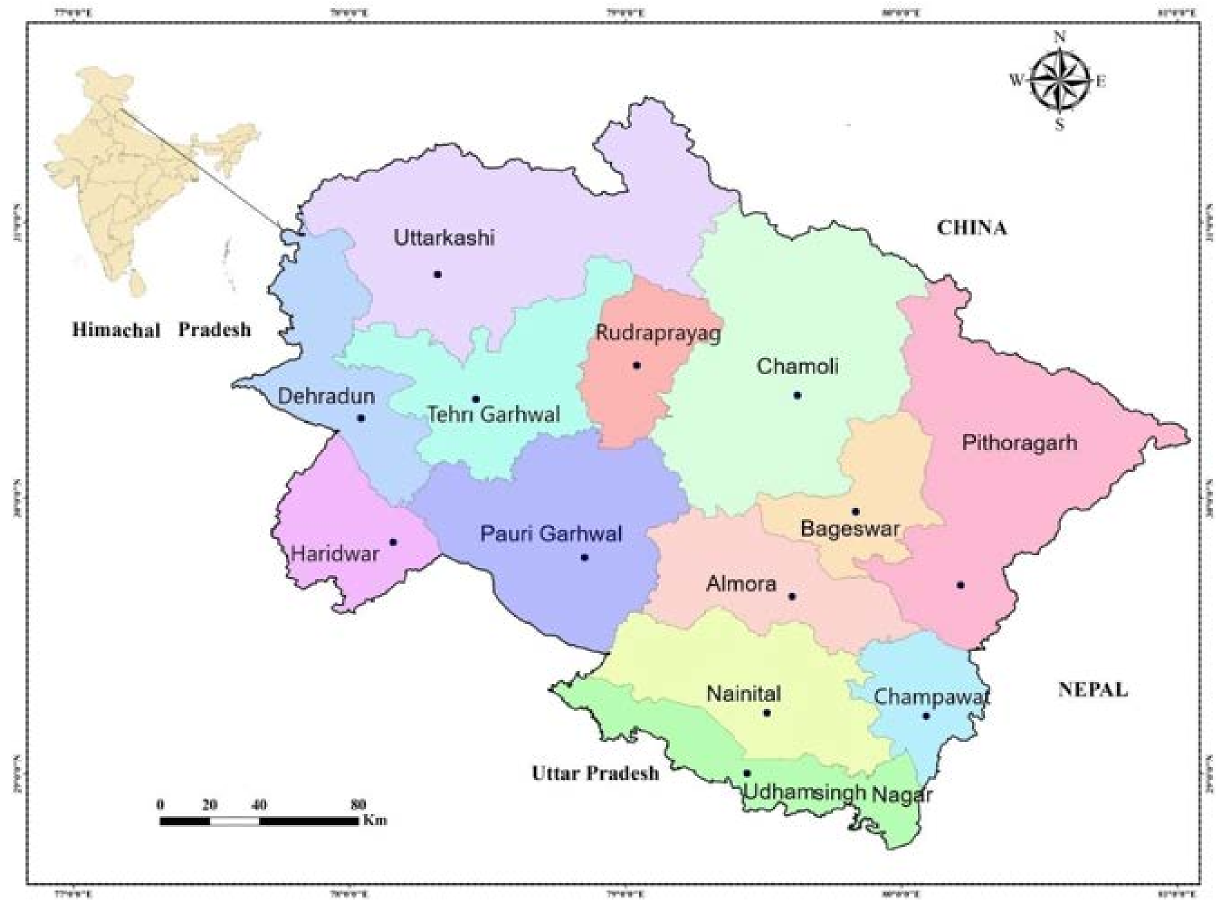

Figure 1. Location map of Uttarakhand depicting district boundaries.

Except for Udhamsingh Nagar and Haridwar all other districts of Uttarakhand have mountainous topography. The state faces high rates of out-migration, particularly from its mountainous districts. This exodus is a cause for concern, as many frontier villages along the

Sino-Indian border are becoming vacated and this trend is evidenced by the negative population growth rate observed in Almora and Pauri Garhwal districts [1]. While this out-migration is often attributed to a lack of employment opportunities and limited access to public services, particularly in healthcare and education, this simplification overlooks the complexities of the issue [2].

This paper argues that the perception of the plains as more prosperous, fuelled by economic indicators and the allure of modern amenities, significantly contributes to this migration. However, a closer look at the well-being indicators in the mountainous districts reveals a different picture. For instance, despite the challenging terrain, the hilly districts of Rudraprayag, Pithoragarh, and Almora have lower infant mortality rates compared to the more developed Haridwar district [3]. This suggests that factors beyond economic prosperity and access to specialized healthcare contribute to human well-being in these regions [4].

By examining data on access to basic amenities and public services, this study aims to unveil the true picture of human well-being in the districts of Uttarakhand and counter the narrative of "lack of facilities" that overshadows the region's quality of life. This analysis considers various factors, including access to healthcare, education, transport, electricity, and water and sanitation, to provide a comprehensive assessment of the ease of living in each district. Ultimately, this research aims to contribute to a more nuanced understanding of human well-being in Uttarakhand and inform policy decisions that promote sustainable development and improve the quality of life for all residents.

2. Methodology and Data Constraints

This study assesses the 'Ease of Living' across the districts of Uttarakhand by analyzing access to fundamental public services and amenities. Recognizing that human well-being transcends purely economic measures, this paper adopts a multi-dimensional approach, focusing on five critical components: healthcare, education, transport infrastructure, electricity availability, and water & sanitation facilities. These parameters were selected as essential indicators reflecting the basic quality of life accessible to the general population within each district.

The analysis relies exclusively on publicly available data sourced from governmental records pertaining to civic amenities and infrastructure within Uttarakhand [1,5]. To enable meaningful comparison and analysis across districts with varying characteristics, the raw data for the selected indicators was systematically normalized. This process standardizes the data, allowing for a comparative assessment of relative access to these essential services.

It is crucial to acknowledge the inherent limitations associated with the data utilized in this study. Primarily, the available datasets predominantly reflect resources and services provided by state-run entities. Consequently, the significant contribution of private sector service providers, particularly prevalent in the more densely populated and economically active plain districts (such as Haridwar, Dehradun, and Udhamsingh Nagar), may not be fully captured in this assessment. The higher population density and greater economic incentives in these areas often attract substantial private investment in sectors like healthcare and education, potentially creating a disparity between the data reflecting public provisions and the actual lived experience of residents who utilize private services. This constraint might influence the comparative 'Ease of Living' index, particularly when contrasting plain districts with the mountainous regions where private sector presence is typically less pronounced.

Furthermore, this study did not involve primary data collection through field surveys to validate the secondary data or gather nuanced, qualitative insights into the lived realities across different districts. The assessment is therefore based on the available quantitative indicators within the public domain.

Despite these constraints, this paper serves an important purpose. By systematically analyzing and comparing existing data on access to basic amenities, it aims to provide a preliminary but valuable perspective on the relative ease of living across Uttarakhand's diverse districts. The findings are intended to stimulate critical discussion, inform policy dialogue, and encourage further, more detailed research into the multifaceted nature of human well-being within the state, particularly addressing the dynamics influencing migration patterns and regional development disparities.

3. Economic Prosperity in Uttarakhand

While assessing the economic prosperity of Uttarakhand's districts, it's crucial to acknowledge that traditional metrics like Gross Domestic Product (GDP) and per capita income can provide a limited perspective. These indicators, while valuable, primarily focus on economic output and may not fully capture the distribution of wealth or the overall well-being of the population. In this analysis, the available district-wise data relating to Gross Domestic Product (GDP) and per capita income [5] are normalized by dividing each value by the maximum value to scale all values between 0 and 1 to allow for comparison across districts and then integrated and averaged to provide a comparative overview of the economic status of the districts.

Table 1

Comparative overview of economic development of the districts of Uttarakhand in India

Sl. No.	District	Normalised GDP (A)	Normalised per Capita Income (B)	Economic Prosperity Score (A+B)/2	Rank
1.	Uttarkashi	0.05	0.30	0.17	11
2.	Chamoli	0.07	0.35	0.21	5
3.	Tehri Garhwal	0.10	0.28	0.19	8
4.	Dehradun	0.59	0.65	0.62	3
5.	Pauri Garhwal	0.11	0.30	0.21	6
6.	Rudraprayag	0.03	0.26	0.15	13
7.	Pithoragarh	0.08	0.33	0.21	7
8.	Almora	0.10	0.28	0.19	9
9.	Nainital	0.27	0.53	0.40	4
10.	Bageshwar	0.04	0.27	0.15	12
11.	Champawat	0.04	0.32	0.18	10
12.	Haridwar	1.00	1.00	1.00	1
13.	Udhamsingh Nagar	0.67	0.74	0.71	2

As expected, the plain districts, particularly Haridwar, Udhamsingh Nagar, and Dehradun, emerge as economically more prosperous (Table 1). This is largely attributed to their advantageous geographical location and better connectivity, which facilitate industrial activities, commercialized agriculture, and the efficient movement of manpower and goods. However, relying solely on GDP and per capita income can be misleading. These metrics may not accurately reflect the well-being of the masses, as these can be skewed by the presence of a few affluent individuals or organizations. Furthermore, the concentration of industrial activities in the plain districts, facilitated by rail and air connectivity, contributes to their higher GDP. The commercialized agriculture in these districts, supported by well-developed irrigation and other related facilities, also plays a significant role in their economic prosperity. However, this economic activity may not necessarily translate to equitable distribution of wealth or improved well-being for all residents.

Therefore, while acknowledging the economic advantages of the plain districts, it is crucial to consider other factors that contribute to human well-being, such as access to essential services, infrastructure, and a healthy environment. A more holistic approach to development, one that goes beyond economic indicators, is necessary to ensure the well-being of all residents of Uttarakhand, regardless of their geographic location or economic status.

4. Human Well-being: Beyond Economic Indicators

This paper is based on the basic premise that economic data does not project the real picture relating to human well-being [4] and is an attempt to ascertain and compare data related to human well-being or ease of living for the districts of Uttarakhand.

Detailed studies do exist on the subject relating to the analysis and assessment of human well-being [4]. These are, however, founded on detailed surveys and data collection pertaining to various aspects relating to well-being. This can be challenging in areas with limited resources or where data collection is not prioritized.

This study assesses human well-being in Uttarakhand from the perspective of access to five basic amenities: water, electricity, education, healthcare, and transport. While comprehensive data on all aspects of well-being is not available, this approach provides a valuable overview and encourages further investigation into these crucial areas. The data used for this analysis is sourced from the Directorate of Statistics and Economic Studies, Government of Uttarakhand [5].

4.1 Access to Healthcare

Health is a fundamental human right and a critical component of well-being [6]. However, access to healthcare, particularly specialized services, is often cited as a reason for out-migration from mountainous districts of Uttarakhand. This is understandable, as specialized healthcare facilities tend to concentrate in urban centers with larger populations and better infrastructure, making these economically challenging to operate in sparsely populated mountainous regions.

However, it is crucial to recognize that access to healthcare is a multifaceted issue, and the concentration of specialized facilities in urban areas doesn't necessarily guarantee better healthcare access for all. Factors such as the distribution of healthcare facilities, availability of qualified medical professionals, affordability of services, and proximity to healthcare providers all play a significant role in determining access.

This study, constrained by the lack of detailed data on medical staff and facility specifics, to ascertain healthcare access across Uttarakhand's districts used the available data pertaining to (i) the number of allopathic hospitals and PHCs which provides a general measure of the availability of healthcare facilities in each district, (ii) the bed availability in allopathic hospitals and PHCs which indicates the capacity of the healthcare system to accommodate patients requiring hospitalization and (iii) the number of PHCs which reflects the availability of primary healthcare services that are crucial for preventive care and early intervention [5].

To create a comparable index, these parameters were normalized for each district by dividing by the highest value, resulting in a range between 0 and 1. The three normalized values were then averaged to create the 'Access to Healthcare Index' (Table 2).

Table 2

Asses to healthcare statistics for various districts of Uttarakhand

Sl. No.	District	Normalised Allopathic Hospitals and PHCs (A)	Normalised Bed Availability in Allopathic Hospitals and PHCs (B)	Normalised PHC Numbers (C)	Access to Healthcare Index (A+B+C/3)	Rank
1.	Uttarkashi	0.30	0.38	0.23	0.31	10
2.	Chamoli	0.50	0.43	0.64	0.52	6
3.	Tehri Garhwal	0.30	0.31	0.05	0.22	13
4.	Dehradun	0.20	0.29	0.18	0.22	12
5.	Pauri Garhwal	0.61	0.72	0.27	0.53	4
6.	Rudraprayag	0.93	0.34	1.00	0.75	1
7.	Pithoragarh	0.46	0.43	0.22	0.37	9
8.	Almora	0.39	0.46	0.27	0.37	8
9.	Nainital	1.00	0.55	0.33	0.63	2
10.	Bageshwar	0.38	0.47	0.37	0.41	7
11.	Champawat	0.27	0.35	0.07	0.23	11
12.	Haridwar	0.61	1.00	0.09	0.57	3
13.	Udhamsingh Nagar	0.67	0.79	0.12	0.53	5

Nainital district had the highest number of allopathic hospitals and PHCs. Haridwar led in bed availability while Rudraprayag had the highest number of PHCs. Surprisingly, Dehradun, generally considered the most developed district and capital of the state, ranked low in the Access to Healthcare Index. This suggests that factors beyond the sheer number of hospitals and beds influence healthcare access.

This is attributed to uneven distribution of facilities; concentration of healthcare facilities in Dehradun city, leaving rural areas with limited access. It is worth adding that the cost of healthcare services in Dehradun is prohibitive for large proportion of residents. Further research is needed to investigate these factors and identify strategies to improve healthcare access in Dehradun and other districts with lower rankings. This could involve (i) decentralizing healthcare facilities by establishing more healthcare centers in rural areas of low ranking districts, (ii) incentivizing medical professionals so as to attract and retain qualified healthcare workers in underserved areas, (iii) improving affordability by implementing policies to make healthcare services more affordable, (iv) enhancing transportation infrastructure and improving road connectivity and public transportation to facilitate access to healthcare facilities. By addressing these issues, Uttarakhand can ensure equitable access to healthcare for all its residents, regardless of their location or economic status.

4.2 Access to Education

Uttarakhand boasts a rich educational heritage dating back to the British Raj, with Dehradun, Mussoorie, and Nainital renowned for hosting world-class institutions [7]. However, evaluating educational access requires a multifaceted approach, considering not just the presence of prestigious schools but also factors like teacher quality, student-teacher ratios, academic performance, infrastructure, and overall learning environment.

Due to limitations in data availability, this study focused on four key parameters sourced from the Directorate of Statistics and Economic Studies [5] to assess access to education based on (i) Junior Basic Schools per lakh population, (ii) Senior Basic Schools per lakh population, (iii) Higher Secondary Schools per lakh population and (iv) the literacy rate which provides an overall indicator of the population's educational attainment.

To create a balanced 'Access to Education Index', these parameters were normalized by dividing by the highest value to confine the range between 0 and 1, and weighted to reflect their relative importance. Access to primary education and literacy rate were given higher weightage of 1.5 and 2.0, respectively acknowledging their crucial role in overall educational development. The other two parameters were assigned weightages of 1.25 and 1.0, respectively (Table 3).

Table 3

Asses to Education statistics for the state of Uttarakhand

Sl. No.	District	Normalised Junior Basic Schools per Lakh Population; A (Weightage = 1.5)	Normalised Senior Basic Schools per Lakh Population; B (Weightage = 1.25)	Normalised Higher Secondary Schools per Lakh Population; C (Weightage = 1)	Normalised Literacy Rate; D (Weightage = 2)	Access to Education Index (1.5A+ 1.25B+ C+2D)/4	Rank
1.	Uttarkashi	0.83	0.99	0.77	0.90	1.26	6
2.	Chamoli	0.92	0.98	0.99	0.98	1.39	2
3.	Tehri Garhwal	0.94	0.99	0.89	0.91	1.34	3
4.	Dehradun	0.28	0.56	0.52	1.00	0.91	11
5.	Pauri Garhwal	0.91	0.92	0.70	0.97	1.29	4
6.	Rudraprayag	1.00	1.00	1.00	0.97	1.42	1
7.	Pithoragarh	0.86	0.70	0.89	0.98	1.25	7
8.	Almora	0.91	0.68	0.88	0.96	1.25	8
9.	Nainital	0.58	0.43	0.52	1.00	0.98	10
10.	Bageshwar	0.93	0.81	0.79	0.95	1.27	5
11.	Champawat	0.79	0.68	0.89	0.95	1.20	9
12.	Haridwar	0.23	0.60	0.30	0.87	0.78	13
13.	Udhamsingh Nagar	0.29	0.53	0.47	0.87	0.82	12

Rudraprayag district demonstrated the highest availability of schools at all levels; Junior Basic, Senior Basic, and Higher Secondary per lakh population while Dehradun district had the highest literacy rate.

Interestingly, despite having renowned schools, Nainital and Dehradun districts ranked relatively low in the overall Access to Education Index with 10th and 11th place, respectively. This unexpected outcome is attributed to several factors that result in less number of state run schools in these districts and thus having negative impact on districts' performance. The factors associated with state run schools include: (i) High concentration of private schools in these districts, (ii) Public perception of lower quality in state-run schools might lead to lower enrolment, (iii) Factors like low enrolment ratios, high dropout rates, poor academic results, and inadequate staffing or facilities, and (iv) Social status linked with private schools influences parents to opt for private education, even if state-run schools are accessible.

Despite these complexities, the data suggests that access to education in hilly districts is better than commonly perceived. This contradicts the notion that lack of educational opportunities is a primary driver of out-migration. Further research is however needed to investigate the quality of education in both state-run and private schools and understand the factors influencing parental choices.

4.3 Access to Transport

Access to transport is fundamental for development and significantly influences the quality of life. It connects people to essential services, markets, education, and healthcare, fostering economic growth and social inclusion. While the plains of Uttarakhand benefit from rail and air connectivity, this study focuses on road infrastructure, recognizing its critical role in connecting mountainous regions [8].

To assess the 'Transport Access Index', this study utilized two key parameters; (i) Metalled Road length (km) per 1000 km^2 area that measures the density of road networks across districts, and (ii) Metalled road length (km) per lakh population which measures road availability relative to population density [5]. The latter recognises that mountainous districts often have large uninhabited or forested areas.

Table 4

Asses to transport statistics for various districts of Uttarakhand

Sl. No.	District	Normalised Metalled Road Length (km) per 1000 km^2 Area; A (Weightage = 1)	Normalised Metalled Road Length (km) per Lakh Population; B (Weightage = 2)	Transport Access Index (A+2B)/2	Rank
1.	Chamoli	0.09	0.42	4.64	8
2.	Almora	0.24	1.00	11.12	1
3.	Tehri Garhwal	0.62	0.63	7.28	3
4.	Champawat	0.98	0.26	3.35	11
5.	Bageshwar	0.48	0.49	5.58	6
6.	Pauri Garhwal	0.57	0.29	3.52	10
7.	Nainital	0.12	0.34	3.78	9
8.	Uttarkashi	0.79	0.85	9.74	2
9.	Pithoragarh	0.60	0.44	5.09	7
10.	Rudraprayag	0.29	0.55	6.21	5
11.	Dehradun	0.48	0.54	6.21	4
12.	Haridwar	0.93	0.11	1.63	13
13.	Udhamsingh Nagar	1.00	0.17	2.34	12

These parameters were normalized by dividing by the highest value to confine the range between 0 and 1, and the latter parameter was assigned a higher weightage of 2 compared to the former (1). This adjustment ensures a fairer comparison by accounting for the varying population densities and terrain challenges in different districts (Table 4).

Udhamsingh Nagar had the highest metalled road length per 1000 km^2 area while Almora led in metalled road length per lakh population. The integrated 'Transport Access Index', considering both parameters and their weightages, placed Almora at the top, followed by Uttarkashi and Tehri while Haridwar and Udhamsingh Nagar ranked at the bottom.

These findings underscore the critical importance of road connectivity in mountainous regions. In these districts, well-maintained road networks are essential for: (i) Access to essential services as roads ensure timely access to healthcare, education, and other vital services, (ii) Economic opportunities as roads facilitate movement of goods and people, promoting trade and economic activities, and (iii) Social inclusion as roads connect remote communities to the wider region, fostering social cohesion and reducing isolation.

Investing in road infrastructure in mountainous districts is crucial for promoting equitable development and enhancing the overall quality of life for residents. This includes not only constructing new roads but also maintaining existing ones to ensure all-weather accessibility and safe travel conditions.

4.4 Access to Electricity

Access to electricity is a fundamental indicator of development and significantly impacts the quality of life for individuals and communities. It powers homes, businesses, and essential services, enabling economic activity, educational opportunities, and improved healthcare [9, 10].

In this study, electrification data, specifically the percentage of families having electricity [5], was used to assess the 'Electricity Availability Index' across the districts of Uttarakhand (Table 5).

The analysis revealed that Haridwar district has the highest electricity availability, followed by Almora and Uttarkashi. This is noteworthy, as Haridwar is a relatively developed district with a significant urban population, while Almora and Uttarkashi are predominantly rural and mountainous.

Surprisingly, Dehradun and Nainital, despite considered relatively developed districts, trail behind in the index. This suggests potential disparities in electricity access across districts, which are attributed to various factors, which include (i) Infrastructure limitations: The mountainous terrain of some districts, such as Rudraprayag and Nainital, poses challenges for extending the electricity grid and ensuring reliable supply, particularly to remote areas, (ii) Economic factors: The cost of electricity infrastructure and connection fees is often a barrier to access for some households, particularly in districts with lower per capita income, and (iii) Population density: Sparsely populated districts face challenges in achieving economies of scale for electricity infrastructure development, potentially leading to higher costs and limited access.

Further investigation is needed to understand the specific factors contributing to these disparities and to identify targeted interventions to improve electricity access for all residents of Uttarakhand.

Ensuring equitable access to electricity is crucial for promoting inclusive development and enhancing the overall well-being of the state's population. Proposed interventions to improve electricity access include (i) Investment in grid expansion and modernization: Extend the electricity grid to remote and underserved areas, and upgrade existing infrastructure to improve reliability and capacity, (ii) Promote off-grid solutions: Explore and incentivize the use of off-grid renewable energy sources, such as solar and micro-hydro, to provide electricity to remote communities where grid extension is challenging or cost-prohibitive, (iii) Address affordability barriers: Implement targeted subsidies or financing mechanisms to help low-income households connect to the grid and afford electricity services, (iv) Strengthen local capacity: Capacity building of local governments and communities to plan, manage, and maintain electricity infrastructure, and (v) Improve policy and regulatory frameworks: Develop clear and transparent policies and regulations that encourage investment in electricity infrastructure and promote equitable access.

Table 5

Asses to electricity statistics for various districts of Uttarakhand

Sl. No.	District	Total Families	% of Families Having electricity	Electricity Availability Index	Rank
1.	Uttarkashi	66558	79.06	0.82	3
2.	Chamoli	85765	83.40	0.87	5
3.	Tehri Garhwal	133494	87.82	0.91	9
4.	Dehradun	322700	96.29	1.00	13
5.	Pauri Garhwal	161688	89.04	0.92	10
6.	Rudraprayag	53492	91.94	0.95	12
7.	Pithoragarh	111542	85.55	0.89	7
8.	Almora	139257	78.90	0.82	2
9.	Nainital	187108	90.32	0.94	11
10.	Bageshwar	57712	81.58	0.85	4
11.	Champawat	52356	72.05	0.75	1
12.	Haridwar	325344	85.76	0.89	8
13.	Udhamsingh Nagar	300052	84.92	0.88	6

By addressing these issues and implementing targeted interventions, Uttarakhand can ensure that all its residents have access to reliable and affordable electricity, contributing to improved quality of life and sustainable development across the state.

4.5 Access to Water and Sanitation

Access to clean drinking water and proper sanitation is not just a matter of convenience; it is fundamental to public health and profoundly impacts the overall well-being of a community [11-13]. The World Health Organization emphasizes that access to safe water, sanitation, and hygiene (WASH) as being critical for preventing and controlling infectious diseases, promoting healthy environments, and ensuring dignity [14].

This study uses data on "Families with Water Available in Premises" and "Families with Toilet Facility" to construct a 'Water and Sanitation Index' for the districts of Uttarakhand [5]. This index reflects the proportion of households with access to these essential services within their homes (Table 6).

Dehradun, Udhamsingh Nagar, and Haridwar lead in the Water and Sanitation Index, indicating better access to clean water and toilet facilities while Bageshwar, Almora, and Rudraprayag lag behind, suggesting potential challenges in water and sanitation access.

Table 6

Asses to Water and Sanitation statistics for various districts of Uttarakhand

Sl. No.	District	Total Families	Normalised Families with Water Available in Premises	Normalised Families with Toilet Facility	Water and Sanitation Index	Rank
1.	Uttarkashi	66558	0.53	0.51	0.52	9
2.	Chamoli	85765	0.46	0.61	0.54	7
3.	Tehri Garhwal	133494	0.40	0.65	0.52	8
4.	Dehradun	322700	1.00	1.00	1.00	1
5.	Pauri Garhwal	161688	0.45	0.64	0.54	6
6.	Rudraprayag	53492	0.37	0.61	0.49	11
7.	Pithoragarh	111542	0.52	0.64	0.58	5
8.	Almora	139257	0.32	0.64	0.48	12
9.	Nainital	187108	0.78	0.92	0.85	4
10.	Bageshwar	57712	0.31	0.63	0.47	13
11.	Champawat	52356	0.45	0.54	0.49	10
12.	Haridwar	325344	0.94	0.77	0.85	3
13.	Udhamsingh Nagar	300052	1.00	0.80	0.90	2

Several factors contribute to these disparities: (i) Geographical challenges: Mountainous terrain and remote locations in districts like Bageshwar, Almora, and Rudraprayag pose significant challenges for infrastructure development and service delivery. Laying pipelines and constructing sanitation facilities in such areas is costly and complex, (ii) Infrastructure limitations: Inadequate water supply networks and sanitation facilities, including treatment plants and sewage systems, restrict access to these essential services, particularly in less developed districts, and (iii) Socioeconomic factors: Poverty, limits awareness about the importance of sanitation, and cultural norms often hinder the adoption of toilet facilities and hygiene practices in some communities.

To ensure equitable access to water and sanitation across Uttarakhand, a multi-faceted approach is needed and this includes (i) Targeted investment: Prioritized investment in water supply and sanitation infrastructure in underserved districts, focusing on extending piped water networks, constructing toilets, and improving wastewater management, (ii) Community engagement: Promoting community awareness and behaviour change regarding sanitation and hygiene practices through education campaigns, community-led initiatives, and the involvement of local leaders, (iii) Inclusive interventions: Design interventions that address the specific needs of vulnerable populations, such as women, children, and people with disabilities, ensuring that everyone has access to safe water and sanitation, and (iv) Capacity building: Strengthening local governance and institutional capacity for effective water and sanitation management, including planning, implementation, and monitoring of WASH programs.

Ensuring equitable access to water and sanitation is not only a matter of public health but also a crucial step towards achieving social equity and enhancing the overall quality of life in Uttarakhand.

5. Ease of Living Index

This study takes a holistic approach to assessing the overall ease of living [15] in Uttarakhand's districts. By integrating and averaging indices for access to health, education, transport, electricity, and water and sanitation, it provides a more comprehensive picture of quality of life than relying solely on economic indicators (Table 7).

Table 7

Ease of Living statistics for various districts of Uttarakhand

Sl. No.	District	Access to health index; A	Access to Education Index; B	Transport Access Index; C	Electricity Availability Index; D	Water and Sanitation Index; E	Ease of Living Index; (A+B+C +D+E)/5	Rank
1.	Uttarkashi	0.31	1.26	4.64	0.82	0.52	1.51	8
2.	Chamoli	0.52	1.39	11.12	0.87	0.54	2.89	1
3.	Tehri Garhwal	0.22	1.34	7.28	0.91	0.52	2.05	3
4.	Dehradun	0.22	0.91	3.35	1.00	1.00	1.30	11
5.	Pauri Garhwal	0.53	1.29	5.58	0.92	0.54	1.78	6
6.	Rudraprayag	0.75	1.42	3.52	0.95	0.49	1.43	9
7.	Pithoragarh	0.37	1.25	3.78	0.89	0.58	1.38	10
8.	Almora	0.37	1.25	9.74	0.82	0.48	2.53	2
9.	Nainital	0.63	0.98	5.09	0.94	0.85	1.70	7
10.	Bageshwar	0.41	1.27	6.21	0.85	0.47	1.84	4
11.	Champawat	0.23	1.20	6.21	0.75	0.49	1.78	5
12.	Haridwar	0.57	0.78	1.63	0.89	0.85	0.94	13
13.	Udhamsingh Nagar	0.53	0.82	2.34	0.88	0.90	1.10	12

The analysis reveals that Chamoli district has the highest Ease of Living Index, followed by Almora and Tehri. This finding challenges the common perception that well-being is directly related to economic prosperity, as Haridwar, despite being economically the most prosperous, trails at the end of the index. This discrepancy highlights the importance of considering a broader range of factors that contribute to human well-being, including access to essential services, infrastructure, and a healthy environment.

Furthermore, the results challenge the assumption that plain districts inherently offer a better quality of life. Chamoli, Almora, and Tehri, all mountainous districts, outperform the plain districts in the Ease of Living Index. This suggests that factors such as: (i) Strong social support networks: Mountain communities often have close-knit social structures and strong community bonds, which contribute to well-being, (ii) Lower population density: Lower population density often leads to less stress, reduced competition for resources, and a greater sense of peace and tranquillity, (iii) Access to natural resources: Mountainous regions often have abundant natural resources, including clean air, fresh water, and scenic beauty, which enhance quality of life. These factors contribute to a higher quality of life in these regions, despite potential limitations in economic opportunities or specialized services.

This study emphasizes the need for a more nuanced and comprehensive approach to assessing well-being and making policy decisions. By considering a wider range of factors beyond economic indicators, policymakers can gain a better understanding of the true quality of life in different regions and develop targeted interventions to improve the well-being of all citizens. This includes: (i) Investing in essential services: Ensuring equitable access to healthcare, education, and other essential services across all districts, (ii) Developing infrastructure: Improving transportation networks, water and sanitation systems, and electricity infrastructure, particularly in underserved areas, (iii) Promoting sustainable practices: Encouraging environmentally friendly practices, preserving natural resources, and creating a healthy and sustainable living environment for all residents.

By adopting a more holistic approach to development, Uttarakhand can ensure a high quality of life for all its residents, regardless of their geographic location or economic status.

6. Conclusions

This study challenges the prevailing narrative that equates economic prosperity with human well-being. By analyzing access to basic amenities and public services, it reveals a more nuanced picture of the ease of living in the districts of Uttarakhand. The findings suggest that hilly districts may offer a comparable or even better quality of life in certain aspects, despite the perceived economic advantages of the plains. This challenges the notion that out-migration from the hills is solely driven by a lack of economic opportunities and highlights the importance of considering a broader range of factors that contribute to human well-being.

This research underscores the need for a more holistic approach to development that prioritizes human well-being and considers a wider range of factors beyond GDP and per capita income. Focusing solely on economic growth may not adequately address the needs and aspirations of all citizens, particularly those in marginalized or less developed regions. By considering factors such as access to healthcare, education, transportation, electricity, and water and sanitation, policymakers can gain a more comprehensive understanding of the factors that contribute to a high quality of life.

Policymakers in Uttarakhand should prioritize equitable access to essential services, invest in infrastructure development, and promote community participation to ensure a high quality of life for all residents [16]. This includes (i) Addressing disparities in access to healthcare: This involves establishing specialty centers in the hills, improving referral facilities, and increasing the availability of qualified medical professionals in underserved areas, (ii) Enhancing educational opportunities: This involves improving the quality of education in state-run schools, addressing issues such as low enrolment and high dropout rates, and providing more equitable access to educational resources, (iii) Improving transportation infrastructure: This involves investing in road construction and maintenance, particularly in mountainous districts, to improve connectivity and access to essential services, (iv) Ensuring reliable electricity access: This involves extending the electricity grid to remote areas, improving the reliability of supply, and addressing affordability issues for low-income households, (v) Investing in water and sanitation infrastructure: This involves improving water supply networks, sanitation facilities, and promoting hygiene practices to enhance public health and well-being.

By addressing these areas and adopting a more holistic approach to development, policymakers can create a more balanced and sustainable future for Uttarakhand. This will not only improve the quality of life for all residents but also address the out-migration issue by creating more attractive and fulfilling living conditions in the hills.

Furthermore, this study highlights the following key takeaways: (i) Economic prosperity is not the sole determinant of well-being: Factors such as access to essential services, infrastructure, social support networks, and a healthy environment play a crucial role in determining the quality of life, (ii) Mountainous districts may offer a comparable or even better quality of life in certain aspects: This challenges the perception of the plains as inherently more desirable and highlights the unique advantages of mountain living, (iii) A holistic approach to development is essential: Policymakers need to consider a wider range of factors beyond economic indicators to ensure the well-being of all citizens and promote sustainable development.

By incorporating these insights into policy decisions, Uttarakhand can create a more equitable and prosperous future for all its residents, regardless of their geographic location or economic status.

7. The Way Forward

Promoting healthy living in the mountains is key to countering out-migration. The state should promote the hills not just as tourist destinations but as places to live for longevity and well-being. This requires a shift in perspective, emphasizing the unique advantages of mountain living and addressing the perceived shortcomings through targeted interventions.

Key strategies for promoting healthy living in the mountains include (i) Promote data collection and analysis with public dissemination of results: This will raise awareness about the true picture of human well-being in the region, countering the narrative of "lack of facilities" and highlighting the positive aspects of mountain living., (ii) Establish specialty centers in the hills or ensure quick referral facilities: This will address healthcare access challenges and alleviate concerns about the availability of specialized medical care in remote areas, (iii) Highlight the positive aspects of living in the mountains: This includes emphasizing the cleaner air, healthier environment, and lower stress levels often associated with mountain living. Promoting eco-tourism and sustainable practices can further enhance the appeal of the region, (iv) Invest in infrastructure development: Improving road connectivity, communication networks, and basic amenities will enhance the quality of life in the mountains and make them more attractive for residents and potential returnees, (v) Promote sustainable economic opportunities: Developing sustainable tourism, agriculture, and small-scale industries will create employment opportunities and reduce the economic pressure to migrate to the plains, (vi) Empower local communities: Involving local communities in decision-making processes and promoting their traditional knowledge and practices will foster a sense of ownership and contribute to sustainable development.

Additional considerations to achieve holistic development of Uttarakhand and improving well-being of the masses include (i) Promote cultural heritage and traditional practices: Highlighting the rich cultural heritage and traditional practices of the mountain communities can foster a sense of pride and identity, making the region more attractive for residents, (ii) Encourage youth engagement and leadership: Empowering young people to participate in community development and leadership roles can create a more vibrant and sustainable future for the mountains, (iii) Address climate change impacts: Implement strategies to mitigate the impacts of climate change on mountain ecosystems and communities, ensuring the long-term sustainability of the region.

Formulating and implementing strategies focused on these aspects, and fostering a holistic approach to development, Uttarakhand can create a thriving and sustainable mountain region that attracts and retains its residents, contributing to the well-being of both the people and the environment. This will not only counter out-migration but also promote social equity, environmental conservation, and a more fulfilling quality of life for all.

Conflicts of Interest: The authors declare no conflict of interest. No funding has been received from any agency for undertaking this research work and except for the authors no agency had any role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, and in the decision to publish the results.

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Citation: Rautela, P.; Bist, M.; Bhatt, D.R. Beyond the mountains: unveiling the ease of living in the Himalayan state of Uttarakhand in India. *Journal of Social Sciences* 2025, 8 (1), pp. 116-131. https://doi.org/10.52326/jss.utm.2025.8(1).08.

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