

Research Article

Challenges in the Mobility of the Tourist in Arunachal Pradesh: An Empirical Case Study of Ziro Valley with Special Reference to Ziro Festival of Music - 2022

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Abstract

This study examines the mobility challenges tourists face in Ziro Valley, Arunachal Pradesh, India. The research was conducted in September 2022 during the Ziro Festival of Music and surveyed a diverse group of international, national, and domestic tourists. The primary goal was to identify the most significant factors that impede tourist mobility to and within their destinations. The study employed a field survey methodology, gathering data from a cross-section of tourists to understand their experiences. To analyse the collected data, researchers used Garrett's ranking technique, a statistical method for ranking items based on their perceived importance. This technique was specifically applied to determine the key challenges affecting overall tourist mobility and to investigate the specific inconveniences faced by international tourists in Arunachal Pradesh and all tourists during their stay in Ziro Valley. The findings of this research indicate that the condition of road communications is the most significant factor hindering tourist mobility. This poor road infrastructure poses a considerable barrier, making it difficult for tourists to reach their desired destinations and navigate the region effectively. The study's results highlight the urgent need for improvements in the transportation network to enhance the tourist experience and promote tourism in the Ziro Valley. In conclusion, this paper successfully identifies and ranks the key mobility challenges encountered by tourists in the Ziro Valley. By using Garrett's ranking technique, the study provides a clear and data-driven understanding of the most pressing issues. The findings strongly suggest that improving road infrastructure is essential to overcoming these obstacles and facilitating smoother travel for visitors. This research serves as a valuable resource for policymakers and tourism developers aiming to enhance the region's accessibility and appeal.

Keywords

Tourist, Ziro Valley, Mobility Challenges, Ziro Festival of Music, Arunachal Pradesh and Garrett Ranking

1. Introduction

The Ziro Valley is a paradise for every nature lover and adventure curiosity. It is a fascinating vacation spot in North

East India that draws visitors from all over with its alluring natural beauty, which is adorned with lush bamboo forests,

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tall blue and green pines, and green rice fields, old-fashioned villages, and rolling hills covered in greenery. Ziro Valley is also one of the most picturesque valleys in all of India. Some of the tourist destination places in Ziro Valley are Talley Valley which is popularly known for wildlife treasures, Hakhe Valley which is known for various medicinal and orchid plants, mesmerizing Paddy-cum-fishy culture, World's Tallest naturally formed Shiva Linga, Siikhe Lake - the first artificial lake in Arunachal Pradesh, Eco Rejuvenate Serene Sii Lake developed under the Amrit Sarowar Sii Burii, Water Conservation Project, etc.

In addition to the incomparable scenic beauty and wildlife richness, the little town of Ziro in the Lower Subansiri district is also well-known for its unique tribal heritage which globally attracts the fraternity of sociologists and anthropologists for their research work. Since ancient times, the "Apatanis" are the inhabitant tribe of this area, and are well-known across the world, particularly for their females embellishing big rings in the nose locally known as 'Yaping Hulo' and huge dark facial tattoos locally known as 'Tiippe' that cover their forehead, nose, and chin.

Further, the start of the 'Ziro Music Festival' in 2012 at Pechi Putu, Biiri, Old Ziro has also immensely contributed to siting this fascinating hill town on an enthusiastic traveler's map. A large number of music fans, top national and international music bands, and folk artists from all over the country and abroad tour here during this season to witness the celebration of the festival which is held every September month of the calendar and leaves some unforgettable memories and footprints in this beautiful place. This beautiful place is cherished not just for the resonance of the festival but, also for the gracious generosity, the delicious food of locals, and mesmerizing landscape that can enchant each and every one for the rest of their lives [1].

However, geographically, the Ziro Valley is situated in between mountain areas. Some scholars have imperfectly interpreted it as a 'Plateau' in place of a valley. The exact topographic features of the valley are that it is surrounded by hills and ranges in all directions and in the middle of the valley, a small river called "Kiile" flows from north to south. Interestingly, [2] appropriately interpreted this land as a 'Valley' by comparing it to the Nepal Valley, he stated, "*Indeed there is a certain similarity between the much larger heart-land of Nepal and broad Apatani Valley, which is so flat that the surrounded by hills it is often wrongly interpreted as 'Apatani Plateau'*".

The Ziro valley is located at a height of 1744 meters above sea level. The nearest railway station for the Ziro valley is at Naharlagun, Papum Pare district, which is about 100 kilometers. The Jorhat, Assam is the closest airport to Ziro located at a distance of about 198 kilometers away, and the Guwahati, Assam is the closest international airport to Ziro which is about 449 kilometers away.

It is important to mention that Arunachal Pradesh is a restricted area, all national and domestic tourists travelling to

Ziro Valley must first get an Inner Line Permit (ILP), and all international tourists or foreign tourists must also present or show a Protected Area Pass (PAP) in order to enter the Ziro Valley of the Lower Subansiri district of Arunachal Pradesh, India. These permits or passes can be obtained from the Resident Commissioner's offices, which are spread throughout India's major cities like New Delhi, Kolkata, and Guwahati.

Tourists are often encountered various challenges and hindrances in mobility to reach their destinations. The improvement in mobility and accessibility is the most significant factor influencing the growth and development of tourism sectors in far-flung locations.

2. Literature Review

There is no particular research that has been studied about the challenges in the mobility of tourists in the Ziro Valley of the Lower Subansiri district of Arunachal Pradesh, India. Some of the studies that attempted to identify the challenges in the mobility of tourists all over the world are as follows.

In the context of tourist mobility challenges [3] in her article, she conducted a survey to determine the mobility problems of tourist destinations in remote places of natural treasure in the Zaoneshye Region in Russia and the Hajnówka Powiat in Poland. It has been found that the car is the most popular and preferred mode of transportation in both regions, necessitating infrastructure adaptation to meet user needs. [4] in their paper, they attempted to analyse how the pandemic affected travel and tourist behaviour in popular tourist areas. The COVID-19 pandemic was discovered to be serving as a catalyst for the sustainable transition of tourism, according to the available literature. Nevertheless, the results showed a dearth of empirical studies on how the pandemic affected traveller movement at destinations. [5] in their study on dimensions of lodging guest satisfaction among guests with mobility challenges by using a mixed-method analysis of web-based texts. It is found that the unstructured travel reviews could only be used to appropriately identify valence, not magnitude when it came to the overall satisfaction of travellers with mobility issues with lodging services. In traditional survey studies on satisfaction structure, it has also been revealed that the scale measure provides less information about the degree of satisfaction. [6] in their study explore the evolving intersection of tourism, mobility, and technology, emphasizing how technological advancements are reshaping travel behavior and destination accessibility. They argue that mobility is not merely a logistical concern but a multidimensional concept influenced by infrastructure, policy, and digital innovation. The authors highlight the growing role of information and communication technologies (ICTs) in facilitating travel planning, navigation, and real-time decision-making, particularly for international tourists navigating complex regulatory environments. [7] they have addressed the gap be-

tween the tourist-specific behaviors and willingness to pay for Mobility as a Service (MaaS) features by proposing a conceptual framework for MaaS in urban tourism and providing empirical evidence through case studies and a conjoint choice experiment. Their work contributes significantly to the literature by highlighting the need for flexible, personalized, and inclusive MaaS solutions tailored to diverse tourist segments. [8] this study critiques traditional tourism statistics for failing to capture the complexity of multi-destination travel. It highlights biases such as double counting and unobserved tourism due to reliance on accommodation-based data. They advocate for integrating GPS and mobile tracking technologies to improve data accuracy and propose analytical tools like the Trip Index and Travel Dispersal Index. Their work emphasizes the need for spatial-temporal models and network analysis to better understand tourist behavior and inform regional tourism planning. [9] the paper investigates mobility challenges in remote natural tourist destinations, focusing on Poland's Hajnowka Poviát and Russia's Zaonshye Region. The study highlights poor transport infrastructure, limited public transit, and reliance on private vehicles as key barriers to accessibility. Drawing on survey data, the research reveals tourists' demand for improved road conditions, bike paths, and roadside services. The literature review emphasizes sustainable mobility, inclusive transport, and multimodal planning as critical frameworks for addressing rural tourism constraints. The study contributes to understanding how geographic isolation and infrastructural deficits hinder tourism development and calls for innovative, locally adapted mobility solutions. [10] study explore how aging populations navigate active mobility—walking and cycling—in tourist-saturated urban environments, using Barcelona as a case study. The authors argue that touristification and mobility transitions intersect to create spatial and temporal frictions for older residents. Drawing on qualitative interviews and mobile ethnography, they reveal how older adults adapt their routines to avoid crowded tourist zones, negotiate shared spaces, and experience exclusion from newly developed cycling infrastructure. The study integrates concepts from mobility justice, age-friendly urbanism, and sustainable transport, highlighting the need for inclusive planning that accounts for embodied mobility experiences and demographic shifts. It calls for a rethinking of urban mobility policies to balance tourism pressures with the rights and needs of aging residents. [11] the study critically examines the disconnect between tourism education and the realities of career mobility in the industry. Despite the sector's growth, graduates face unstable, casualized employment with limited vertical advancement, especially in small and medium enterprises. The literature highlights a mismatch between vocational training and the transferable skills needed for portfolio careers. Studies show that tourism professionals often seek broader opportunities due to low pay and poor working conditions, prompting calls for stra-

tegic career planning and experiential learning integration. The paper argues for a reorientation of tourism curricula to better prepare students for dynamic, non-linear career paths in a globalized labor market. [12] the authors identify five key themes: the pandemic as a catalyst for sustainable tourism, short- and long-term mobility impacts, adaptation strategies, management recommendations, and future research directions. Findings suggest a shift toward proximity tourism, increased use of private transport, and heightened interest in nature-based travel. The pandemic has exposed vulnerabilities in mass tourism models and underscored the need for smart mobility solutions, inclusive planning, and low-carbon transport systems. The paper calls for deeper empirical research to guide sustainable mobility transitions in post-pandemic tourism. [13] the study traces the evolution of the tourist as a central figure in mobility studies, emphasizing its conceptual complexity and cultural variability. Building on foundational work by MacCannell, Cohen, and Smith, he explores how tourists are not only physical travelers but also participants in inner, symbolic journeys shaped by desires for authenticity and transformation. The article critiques rigid classifications of tourists and highlights the blurred boundaries between tourists, pilgrims, explorers, and anthropologists. Graburn also discusses the rise of moral and reflexive tourism, the influence of digital technologies, and the growing diversity of tourist types—from volunteer and medical tourists to cyber and content tourists. His work underscores the need for ethnographic depth and interdisciplinary approaches in understanding tourism's social, emotional, and ethical dimensions.

Despite growing research on mobility of tourist in India and the globe, limited studies focus on mobility of tourist in Arunachal Pradesh. Therefore, the present study is the first empirical study pertaining to the challenges in the mobility of tourists in the Ziro Valley which is situated in the Lower Subansiri district of Arunachal Pradesh, India.

3. Objectives of The Study

For the present study, the researcher has considered only three objectives which are as follows:

- 1) To find out the main mobility hindrances of tourists in Ziro Valley which is situated in the Lower Subansiri district, Arunachal Pradesh, India.
- 2) To examine the main challenges encountered by international tourists in Arunachal Pradesh.
- 3) To analyze the inconvenience confronted by the tourist while staying in Ziro Valley.

4. Research Methodology

The study was carried out in Ziro Valley which is situated in the Lower Subansiri district of Arunachal Pradesh, India. The present study is purely based on primary data collected

through field surveys from different tourist places in the Ziro Valley during the Ziro Festival of Music - 2022, popularly known as ZFM which has been organised after a gap of two years because of the Covid pandemic. The questionnaires and schedule were used in the form of interviews keeping in mind the situation demand. However, secondary data has been used to substantiate the empirical study by composing a substratum for determining the population size for the study.

4.1. Research Method and Tools

The research method and tools like personal interviews, social networking, telephonic contacts, and observation methods have been used during the field study. Structured schedules, digital cameras, telephones, the internet, and other stationeries have also been extensively used to gather field data during the present study.

4.2. Sampling Techniques & Size

For the present study, stratified random sampling under the probability sampling technique has been used. Some of the tourist places of Ziro Valey like Pechi Putu, Hakhe Valley, Shiva Linga, Sii Lake, and Sikhe Lake site have been considered as 4 (Four) strata for the present study.

4.3. Sampling Design

During the field study, respondents have been classified into three categories viz, international tourists, national tourists, and domestic tourists. For each category 80 respondents/tourists have been asked to rank the 11 (Eleven) various factors related to the challenges in mobility faced by them based on their experiences in Ziro Valley. A total of 240 numbers of respondents have been considered for the present study. The details of the present study sampling design are presented below:

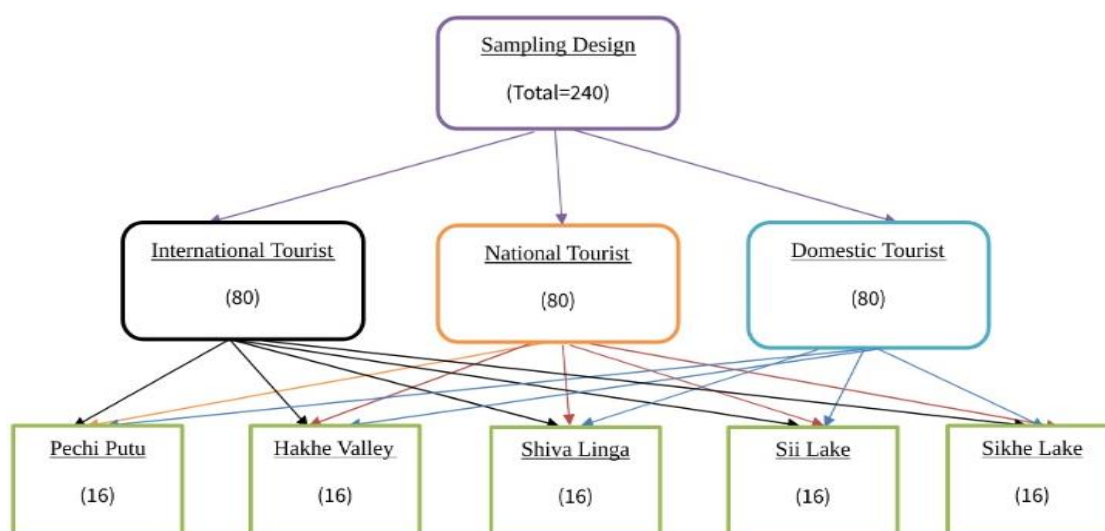


Figure 1. Sampling Design.

4.4. Tool of Data Examination

Garrett's Ranking Method has been used to analyses the rank preference given by the respondents upon the 11 (Eleven) challenges in mobility factors in the Ziro Valley which is located at the Lower Subansiri district of Arunachal Pradesh, India. According to this method, the percentage position is determined with the help of the following formula.

$$\text{Percentage position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Rank given for the i th factors by the j th respondents

N_j = Number of factors ranked by the j th respondents

The ranks assigned by the international, national, and domestic tourists against each variable have been converted into the percentage positions and transmuted scores on the scale of 100 points have been taken from Garrett's Ranking Table. Garret bar chart has been used to analyze field data.

4.5. Conceptual Framework of Research

The literature review confirms the research conceptual framework of the present study. It consists of many proposed relationships that should be studied empirically. The important concepts and variables of the study are as follows:

4.5.1. Domestic Tourist

A domestic tourist is any person or group of persons coming from within the North-East states of India i.e. Assam, Meghalaya, Tripura, Nagaland, Manipur, Mizoram, and Sikkim to Arunachal Pradesh, particularly in Ziro Valley area.

4.5.2. National Tourist

A national tourist means any person or group of persons coming from outside the North-East states of India like Delhi, Punjab, Haryana, Maharashtra, Tamil Nadu, Uttar Pradesh, Gujarat, Kerala, West Bengal, Bihar, Rajasthan, Odisha, Jharkhand, Madhya Pradesh, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Chhattisgarh, Telangana, Karnataka, etc. to the Ziro Valley of Arunachal Pradesh.

4.5.3. International Tourist

An international tourist means any person or group of persons coming from outside the Indian territory to visit Arunachal Pradesh for tourism, research, business, employment, studies, etc.

4.5.4. Inner Line Permit (ILP)

Any foreign, national, and domestic visitor to the Indian state of Arunachal Pradesh who intends to enter a Ziro Valley region must first get an Inner Line Permit (ILP) as the whole of the Arunachal Pradesh falls under a restricted area. For tourists, receiving a permit is the standard procedure. Indians who are not natives of Arunachal Pradesh must have an Inner Line Permit before they can enter any location in the state. The Government of Arunachal Pradesh issues the ILPs through online and offline modes, which has offices in Lakhimpur, Dibrugarh, Jorhat, Tezpur, Guwahati, Shillong,

Kolkata and Delhi [14].

The Bengal Eastern Frontier Regulation of 1873, popularly known as the BEFR-1873 included the Inner Line Permit. It was put into place to safeguard the British Empire's commercial interests by forbidding trade between its citizens (at the time, Indians) and outsiders in these areas.

4.5.5. Protected Area Permit (PAP) or Restricted Area Permit (RAP)

All regions lying in the middle of the "Inner line," according to the established in the said order, and the International Border of the States have been designated as the Areas of Protected under the Foreigners (Protected Areas) Order, 1958. The whole of Arunachal Pradesh comes under the protected area. Also, the Arunachal Pradesh state of India falls under the domain of the Foreigners (Restricted Areas) Order, 1963 that a permit must be obtained from the concerned Indian government officials before a foreigner can enter or stay in the country [15].

Arunachal Pradesh requires all visitors from outside the country to get a Protection Area Permit (PAP). All Indian Missions Abroad and All Foreigners Regional Registration Officers (FRRO) in Delhi, Mumbai, and Kolkata are the places where they can get the Protected Area Permit. Additionally, they can get from the Home Ministry of the Indian Government, the Chief Immigration Officer in Chennai, and the Home Commissioner in Itanagar for the Indian State of Arunachal Pradesh. The prior permission of the Ministry of Home Affairs shall be taken before the obtaining of PAP/RAP by the foreigner for a specific purpose like tourism, research, business, employment, studies, etc. shall be permitted on their passport.

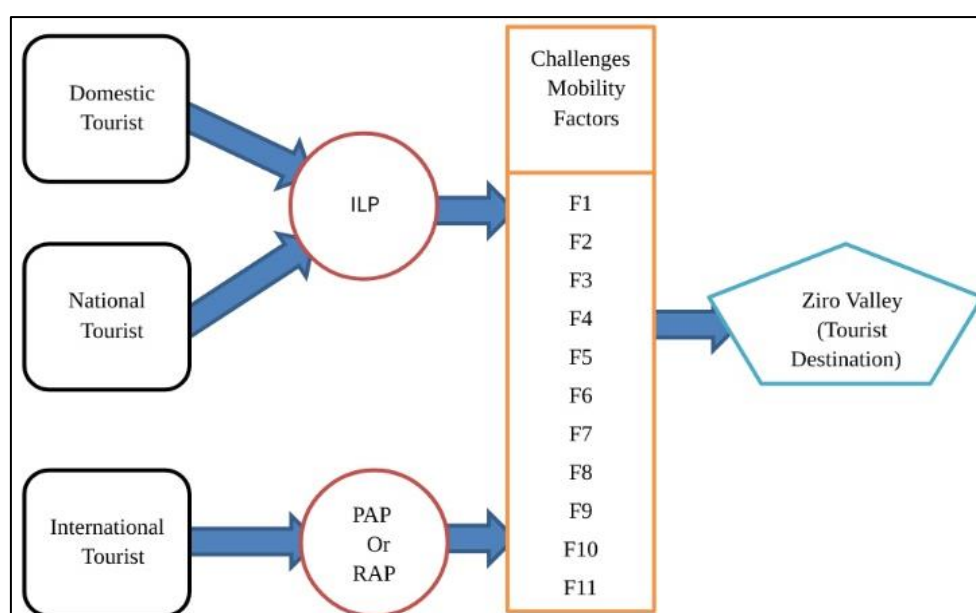


Figure 2. Conceptual Framework of Research.

4.5.6. Challenges Mobility Factors

The challenges of mobility factors are the main hindrances that perform as barriers to reaching Ziro Valley of Arunachal Pradesh, India. Some of the 11 (Eleven) important challenges of mobility factors are F1: *Easy accessibility of transportation*, F2: *Condition of road communication*, F3: *Feasibility of weather conditions*, F4: *Coverage of network connectivity*, F5: *Welcoming nature of indigenous inhabitants (locality)*, F6: *Availability of fooding & lodging facility*, F7: *Affordability of fooding & lodging*, F8: *Accessibility of site-seeing areas*, F9: *The convenience of procuring an entry pass in Arunachal Pradesh*, F10: *Provisions of financial services*, and F11: *Provision of Law & Order*.

4.5.7. Ziro Valley (Tourist Destination)

For the present study, Ziro Valley of Arunachal Pradesh is the tourist destination where a field survey of the present is

carried out empirically.

The detailed conceptual framework of the present study is diagrammatically presented below:

5. Calculation of Garrett's Ranking Technique

5.1. International Tourist

The preference and ranking of the challenges in mobility faced by international tourists in Ziro Valley of Arunachal Pradesh, India is presented in Table 1. The table is showing the 11 challenges in mobility variables found during personal interviews and with the help of questionnaires.

Table 1. Preference of challenges in the mobility of tourists in Ziro Valley by the International Tourist.

Factors of mobility challenges	Rank given by the International Respondents										
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
F1	4	22	12	40	1	1	0	0	0	0	0
F2	12	46	21	0	0	1	0	0	0	0	0
F3	0	0	0	0	0	0	2	0	4	24	50
F4	0	0	1	4	10	21	0	1	43	0	0
F5	0	0	0	0	0	0	0	0	0	52	28
F6	0	0	1	3	23	40	0	1	10	2	0
F7	0	0	42	30	2	3	1	1	1	0	0
F8	0	0	1	0	41	10	23	4	1	0	0
F9	64	12	1	1	1	1	0	0	0	0	0
F10	0	0	1	1	1	1	52	23	1	0	0
F11	0	0	0	1	1	2	2	50	20	2	2

Source: Field survey Data, 2022.

The Percent Positions & Garrett Values

The percent positions and Garrett values of Table 1, Table 4, Table 6, and Table 8 are presented below:

Table 2. Percent Positions & Garret Value.

Sl. No	100 (Rij - 0.5)/Nj	Calculated Value	Garret Value
1	100 (1-0.5)/11	4.54	82
2	100 (2-0.5)/11	13.6	71

Sl. No	100 (Rij - 0.5)/Nj	Calculated Value	Garret Value
3	100 (3-0.5)/11	22.72	64
4	100 (4-0.5)/11	31.81	59
5	100 (5-0.5)/11	40.9	54
6	100 (6-0.5)/11	50	50
7	100 (7-0.5)/11	59.09	45
8	100 (8-0.5)/11	68.18	41
9	100 (9-0.5)/11	77.27	35
10	100 (10-0.5)/11	86.36	28
11	100 (11-0.5)/11	95.45	17

Source: Computed by the authors from the Garrett Value Table.

5.1.1. Computation of Garrett Value and Ranking of International Tourists

The computation of Garrett's value and ranking of mobility challenges faced by National tourists are presented below.

Table 3. Computation of Garret Value and Ranking.

Factors of mobility challenges	Rank given by the International Respondents											Total	%	Rank
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th			
F1	328	1562	768	2360	54	50	0	0	0	0	0	5122	64.03	4 th
F2	984	3266	1491	0	0	50	0	0	0	0	0	5791	72.39	2 nd
F3	0	0	0	0	0	0	90	0	140	672	850	1752	21.9	11 th
F4	0	0	1	236	540	1050	0	41	1505	0	0	3373	42.16	8 th
F5	0	0	0	0	0	0	0	0	0	1456	476	1932	24.15	10 th
F6	0	0	1	177	1242	2000	0	41	350	56	0	3867	48.34	6 th
F7	0	0	2982	1770	108	150	45	41	35	0	0	5131	64.14	3 rd
F8	0	0	71	0	2214	500	1035	164	35	0	0	4019	50.24	5 th
F9	5248	852	71	59	54	50	0	0	0	0	0	6334	79.18	1 st
F10	0	0	71	59	54	50	3240	943	35	0	0	3552	44.4	7 th
F11	0	0	0	59	54	100	90	2050	700	56	34	3143	39.29	9 th

Source: Computed by authors from the Primary Data.

It is observed from Table 3 that international tourists have witnessed and ranked F9: *The convenience of procuring an entry pass in Arunachal Pradesh*, F2: *Condition of road communication*, and F7: *Affordability of fooding and lodging* as First, second, and third respectively for challenges in mobility while visiting the Ziro Valley.

5.1.2. Field Survey Observation

During the field study, it has also been revealed that most international tourists were facing difficulties in obtaining an entry pass like PAP/RAP. In addition, they also complained about the prevailing road conditions in Arunachal Pradesh as well as the availability and affordability of fooding and lodging in the Ziro Valley during the festival season. However,

during the interview, some respondents from Isreal informed that their entry passes have been arranged by the organiser of the ZFM. So, they didn't face any problem in getting entry passes for Arunachal Pradesh.

5.2. National Tourist

The preference and ranking of the challenges in mobility faced by national tourists in Ziro Valley of Arunachal Pradesh, India is presented in Table 4. The table is showing the 11 challenges in mobility variables found during personal interviews and with the help of questionnaires.

Table 4. Preference of challenges in the mobility of tourists in Ziro Valley by the National Tourist.

Factors of mobility challenges	Rank given by the National Respondents										
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
F1	2	6	20	50	1	0	0	1	0	0	0
F2	56	23	1	0	0	0	0	0	0	0	0
F3	0	0	0	0	1	0	2	1	20	1	55
F4	0	1	2	0	70	4	1	0	1	1	0
F5	0	0	0	1	0	0	1	2	1	72	3
F6	0	0	3	4	0	71	0	0	1	1	0
F7	0	1	50	23	6	0	0	0	0	0	0
F8	0	0	1	0	0	0	3	73	0	3	0
F9	20	50	2	1	1	2	1	0	1	1	1
F10	0	0	1	0	1	1	72	2	2	1	0
F11	0	0	0	0	0	1	0	1	55	0	23

Source: Field survey Data, 2022.

5.2.1. Computation of Garrett Value and Ranking of National Tourists

The computation of Garrett's value and ranking of mobility challenges faced by National tourists are presented below.

Table 5. Computation of Garret Value and Ranking.

Factors of mobility challenges	Rank given by the National Respondents											Total	%	Rank
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th			
F1	164	426	1280	2950	54	0	0	41	0	0	0	4915	61.44	4 th
F2	4592	1633	64	0	0	0	0	0	0	0	0	6289	78.61	1 st
F3	0	0	0	0	54	0	90	41	700	28	935	1848	23.1	11 th
F4	0	71	128	0	3780	200	45	0	35	28	0	4287	53.59	5 th
F5	0	0	0	59	0	0	45	82	35	2016	51	2288	28.6	10 th
F6	0	0	192	236	0	3550	0	0	35	28	0	4041	50.51	6 th
F7	0	71	3200	1357	324	0	0	0	0	0	0	4952	61.9	3 rd

Factors of mobility challenges	Rank given by the National Respondents											Total	%	Rank
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th			
F8	0	0	64	0	0	0	135	2993	0	84	0	3276	40.95	8 th
F9	1640	3550	128	59	54	100	45	0	35	28	17	5656	70.7	2 nd
F10	0	0	64	0	54	50	3240	82	70	28	0	3588	44.85	7 th
F11	0	0	0	0	0	50	0	41	1925	0	391	2407	30.09	9 th

Source: Computed by authors from the Primary Data.

From above Table 5, it has been found that the F2: *Condition of road communication* has been ranked first by the national tourists. It is because of the long distance from the nearest railway station and airport, geographical barriers, and under construction of national highway 13 popularly known as the Trans-Arunachal Highway.

Further, F9: *The convenience of procuring an entry pass in Arunachal Pradesh*, and F7: *Affordability of fooding & lodging* have been ranked second and third respectively.

5.2.2. Field Survey Observation

At the time of the field survey, many of the tourists reveal that procurement of ILP was difficult and many don't have

ideas about where to get the ILP, besides this, the cost of fooding and lodging was not charged according to their expectations at the festival session.

5.3. Domestic Tourist

The preference and ranking of the challenges in mobility faced by domestic tourists in Ziro Valley of Arunachal Pradesh, India is presented in Table 6. The table is showing the 11 challenges in mobility variables found during personal interviews and with the help of questionnaires.

Table 6. Preference of challenges in the mobility of tourists in Ziro Valley by the Domestic Tourist.

Factors of mobility challenges	Rank given by the Domestic Respondents											1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th											
F1	2	44	1	1	0	31	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F2	77	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F3	0	0	0	1	1	1	1	30	1	2	43	0	0	0	0	0	0	0	0	0	0	0
F4	0	31	2	2	41	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
F5	0	0	0	0	1	1	0	0	0	43	35	0	0	0	0	0	0	0	0	0	0	0
F6	0	0	0	0	2	2	1	41	2	30	2	0	0	0	0	0	0	0	0	0	0	0
F7	0	0	0	42	35	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F8	0	1	2	4	0	0	72	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
F9	0	1	43	30	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
F10	0	0	31	1	1	41	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
F11	0	0	0	0	1	0	0	4	71	4	0	0	0	0	0	0	0	0	0	0	0	0

Source: Field survey Data, 2022.

5.3.1. Computation of Garrett Value and Ranking of Domestic Tourists

The computation of Cumulative Garrett's value and ranking of mobility challenges faced by International, National, and Domestic tourists are presented below.

Table 7. Computation of Garret Value and Ranking.

Factors of mobility challenges	Rank given by the Domestic Respondents											Total	%	Rank
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th			
F1	164	3124	64	59	0	1550	0	41	0	0	0	5002	62.53	2 nd
F2	6314	213	0	0	0	0	0	0	0	0	0	6527	81.59	1 st
F3	0	0	0	59	54	50	45	1230	35	56	731	2260	28.25	10 th
F4	0	2201	128	118	2214	100	0	0	70	0	0	4831	60.39	4 th
F5	0	0	0	0	54	50	0	0	0	1204	595	1903	23.79	11 th
F6	0	0	0	0	108	100	45	1681	70	840	34	2878	35.98	8 th
F7	0	0	0	2478	1890	50	45	41	0	0	0	4504	56.3	5 th
F8	0	71	128	236	0	0	3240	0	35	0	0	3710	46.38	7 th
F9	0	71	2752	1770	108	0	0	82	70	0	0	4853	60.66	3 rd
F10	0	0	1984	59	54	2050	135	82	35	0	0	4399	54.99	6 th
F11	0	0	0	0	54	0	0	164	2485	112	0	2815	35.19	9 th

Source: Computed by authors from the Primary Data.

It is clearly shown in [Table 7](#) that F2: *Condition of road communication*, F1: *Easy accessibility of transportation*, and F9: *The convenience of procuring an entry pass in Arunachal Pradesh* have been ranked first, second, and third respectively.

5.3.2. Field Survey Observation

During the field study, it has been found that many domestic tourists travelled by private vehicle and were facing the pathetic road condition and some were facing unavailability of cab services from their locality to the destination. In addition, domestic tourists also reveal that procuring ILP was

a difficult task as one local representative in the locality was needed for the references and signing of the ILP.

5.4. International, National, and Domestic Tourist

The comprehensive preferences and ranking of the challenges in mobility faced by all the tourists in Ziro Valley of Arunachal Pradesh, India is presented in [Table 8](#). The table is showing the 11 challenges in mobility variables found during personal interviews and with the help of questionnaires.

Table 8. Preference of challenges in the mobility of tourists in Ziro Valley by the All Tourist.

Factors of mobility challenges	Rank given by the All Respondents										
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
F1	8	72	33	91	2	32	0	2	0	0	0
F2	145	72	22	0	0	1	0	0	0	0	0
F3	0	0	0	1	2	1	5	31	25	27	148
F4	0	32	5	6	121	27	1	1	46	1	0

Factors of mobility challenges	Rank given by the All Respondents										
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th
F5	0	0	0	1	1	1	1	2	1	167	66
F6	0	0	4	7	25	113	1	42	13	33	2
F7	0	1	92	95	43	4	2	2	1	0	0
F8	0	1	4	4	41	10	98	77	2	3	0
F9	84	63	46	32	4	3	1	2	3	1	1
F10	0	0	33	1	3	43	127	27	5	1	0
F11	0	0	0	1	2	3	2	55	146	6	25

Source: Field survey Data, 2022.

5.4.1. Computation of Garrett Value and Ranking of All Tourists

The computation of Cumulative Garrett's value and ranking of mobility challenges faced by International, National, and Domestic tourists are presented below.

Table 9. Computation of Garret Value and Ranking.

Factors of mobility challenges	Rank given by the All Respondents											Total	%	Rank
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th			
F1	656	5112	2112	5369	108	1600	0	82	0	0	0	15039	62.66	3 rd
F2	11890	5112	1408	0	0	50	0	0	0	0	0	18460	76.92	1 st
F3	0	0	0	59	108	50	225	1271	875	756	2516	5860	24.42	11 th
F4	0	2272	320	354	6534	1350	45	41	1610	28	0	12554	52.31	5 th
F5	0	0	0	59	54	50	45	82	35	4676	1122	6123	25.51	10 th
F6	0	0	256	413	1350	5650	45	1722	455	924	34	10849	45.20	8 th
F7	0	71	5888	5605	2322	200	90	82	34	0	0	14292	59.55	4 th
F8	0	71	256	236	2214	500	4410	3157	70	84	0	10998	45.83	7 th
F9	6888	4473	2944	1888	216	150	45	82	105	28	17	16836	70.15	2 nd
F10	0	0	2112	59	162	2150	5715	1107	175	28	0	11508	47.95	6 th
F11	0	0	0	59	108	150	90	2255	5110	168	425	8365	34.85	9 th

Source: Computed by authors from the Primary Data.

It is shown from Table 9 that 76.92 per cent of tourists in the present study have considered and ranked F2: *Conditions of road communication* as the most difficult mobility challenge that they encounter during the whole tour and visits to Ziro Valley.

5.4.2. Field Survey Observation

During the field survey, it has been observed that the

nearest railway station is about 100 kilometers and the closest international airport is located at a distance of about 449 kilometers away from the study area, moreover due to the remoteness of the geographical location, heavy rain, loose soil, and under construction of NH 13, the conditions of the road toward the Ziro Valley were very pathetic. Therefore, visitors and tourists who were traveling to Ziro Valley, hired or owned only high-ground clearance vehicles or off-road capability

vehicles like Mahindra Thar, Mahindra Scorpio, Toyota Fortuner's, etc. to overcome the challenges.

The Table 9 also depicts that 70.15 per cent of the total respondents encountered and rank the procurement of an entry pass like PAP/RAP for international tourists and ILP for national & domestic tourists as the second most mobility challenges. Apart from this, during the personal interview maximum of tourists revealed that they were finding difficulty in applying for the required entry pass, and also, they reported that the process of applying necessary entry pass was time-consuming as each tourist have to visit personally to the concerned office and authorized department/agency of the state and central Government of India to procure the required pass and clearance.

Furthermore, it is reflected in the table that the availability of transportation facilities for to and fro traveling is ranked by 62.66 per cent of the total respondents and is placed as the third most challenging factor encountered in the study area. In addition, during the personal interview, many tourists who stayed in Ziro Valley for a short duration expressed the shortage of cab services at their convenience for to and fro travelling. In the same way, the present study also divulges the problem of shortage of transportation facilities due to the lack of population density, remote locations, non-availability of an online platform for hiring vehicles, less demand/user of cab services after 6.00 pm and particularly after 8.00 pm no cab service is available, etc.

The overall ranking of all tourists regarding the 11 (Eleven) factors of challenges in the mobility of the Ziro Valley which is located at the Lower Subansiri district of Arunachal Pradesh, India as the tourist destination has been presented in Figure 3 (bar diagram):

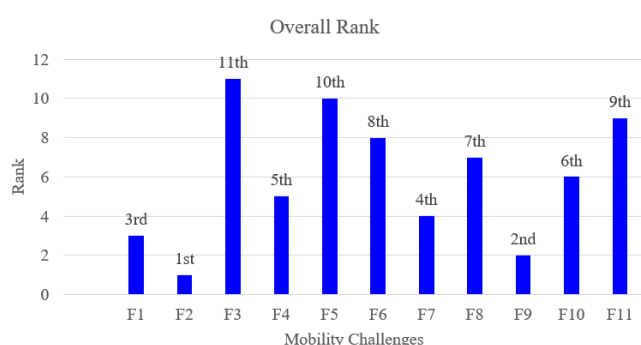


Figure 3. Overall Ranking of the Challenges in the Mobility.

6. Conclusion

It has been revealed from the Garrett Ranking analysis on the accumulated field data of the 11 (Eleven) factors of the challenges in mobility, the international tourist faced and ranked the procurement of the entry pass in Arunachal Pradesh as the main barrier and challenge in the mobility. As 70.15 per cent of all international tourists encountered a

problem while the procurement of entry passes like PAP/RAP from the Indian Government's Ministry of Home Affairs. They were also finding difficulty in applying for the entry pass as the process of applying for entry pass was time-consuming as each tourist have to visit personally to the concerned department of the Indian Government's Ministry of Home Affairs to procure the required pass and clearance. Likewise, F2: *Condition of road communication*, and F7: *Affordability of fooding and lodging* have been ranked second and third respectively by the international tourists for challenges in mobility while visiting the Ziro Valley and the details of the international tourists ranking about 11 (Eleven) factors of the challenges in mobility have shown in Table 3.

However, for the national tourist F2: *The condition of road communication* has acted as the main hindrance to the mobility of tourists towards the Ziro Valley. Thus, F2 has been considered as first ranked by national tourists as some of the national tourists used their private vehicle for the to and fro journey. Therefore, they have encountered many road-related hindrances like non-surfaced, muddy, hilly terrain, and new earth-cutting for the road. Also, national highway 13, popularly known as the Trans-Arunachal Highway was under construction. Out of the 11 (Eleven) factors of challenges in mobility, the F9: *The convenience of procuring an entry pass in Arunachal Pradesh* has been ranked second by them as many of the national tourists have revealed that the procurement of ILP was very difficult due to lack of knowledge regarding the procurement of the ILP.

Interestingly, both the international and national tourists who have stayed in the Ziro Valley for a short duration ranked the F7: *Affordability of fooding & lodging* as the third most challenging factor in the study area. As the low-budget fooding and lodging facilities were pre-reserved, therefore, remaining fooding and lodging facilities were considered to be high-budget and not charged according to their expectations during the festival session.

It is also extracted from Table 5 and Table 7 that both the national and domestic tourists have considered the F2: *Condition of road communication* as the main hindrance to tourist mobility in Arunachal Pradesh towards the Ziro Valley tourist destination. The reasons for conditions of road communication as main hindrances have been comprehensively discussed in the national tourist domain. During the field study, it has also reported that they faced lots of difficulty during the procurement process of ILP as one local representative in the locality was needed for the reference's purpose. The details of the domestic tourists ranking about 11 (Eleven) factors of the challenges in mobility have shown in Table 7.

However, the overall ranking of the 11 (Eleven) factors of the challenges in mobility by all tourists has been tabulated in Table 9. According to Table 9, the main hindrance to the mobility of tourists is the pathetic conditions of road communication and followed by the inconvenience of procuring an entry pass in Arunachal Pradesh, shortage of transportation facilities, etc. The details of the overall ranking pertaining to

the 11 (Eleven) factors of the challenges in mobility in the Ziro Valley which is located at the Lower Subansiri district of Arunachal Pradesh, India have shown in Table 9 and Figure 3.

Nevertheless, for the convenience of facilitating and attracting more tourists to Ziro Valley, the Government of Arunachal Pradesh has initiated various development projects like bringing up the international airways in the state capital Itanagar which is nearly 100 km away from the Ziro Valley, Advanced Landing Ground (ALG) operating for both military and commuter in Ziro Valley, Constructing Trans-Arunachal Highway (TAH) for connecting the every district headquarters, initiating the online platform for ILP, increasing the security personal for maintaining law and order, inviting many new banking institutions, improving network connectivity for easy access of networking, digitalisation of various services, etc.

Future research on tourism mobility in Arunachal Pradesh should focus on evaluating the digitalization of permit systems, particularly the effectiveness and accessibility of online platforms for ILP and PAP. This includes assessing tourists' digital literacy and exploring biometric or mobile-based verification to simplify the process. Infrastructure remains a major concern, warranting longitudinal studies on the Trans-Arunachal Highway's impact and the resilience of road networks in hilly terrain, with attention to sustainable construction practices. Affordability of tourism services also needs exploration, especially pricing during peak seasons and the role of homestays in enhancing access. Research should assess tourists' willingness to pay versus perceived value. Communication strategies deserve scrutiny, including the effectiveness of current ILP/PAP information dissemination and the development of multilingual, culturally adaptive systems. Administrative coordination between tourism and government bodies should be studied to identify bottlenecks and explore decentralized permit issuance. Understanding tourist behavior—how mobility challenges affect destination choice and stay duration—is vital. Additionally, the socio-economic and environmental impact of new infrastructure like ALG and the Itanagar airport should be evaluated, alongside community participation. Comparative studies with other remote destinations can help benchmark best practices and inform policy innovations tailored to Arunachal Pradesh's unique context.

Abbreviations

ZFM	Ziro Festival of Music
ILP	Inner Line Permit
PAP	Protected Area Pass
RAP	Restricted Area Permit
FRRO	Foreigners Regional Registration Officers
MaaS	Mobility as a Service

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Conflicts of Interest

The authors declare no conflicts of interest.

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