A Field Survey on Conditions of Public Perceptions toward Basic Infrastructure in Nepal

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Abstract. Basic infrastructure plays a fundamental role in shaping the quality of life and economic activity in any society. In recent years, Nepal has seen significant advancements. However, several critical challenges may remain unresolved. For instance, while infrastructure stability has improved in some areas, disparities between the capital and other regions remain. This contradiction between rapid development and insufficient infrastructure highlights the need for a deeper understanding of public perceptions and expectations. This study investigates Nepalese people's perceptions of basic infrastructure, including gas, water, information and communication technology, roads, and public transportation, focusing on aspects such as frequency of use, satisfaction levels, and future expectations. By identifying existing challenges, this research aims to explore issues and approaches for future development. Field surveys were conducted in two Nepali cities, and the obtained data were analyzed to clarify Nepalis' perceptions of infrastructure and facilitate a multifaceted comparative analysis. In fact, urban development in Kathmandu, the capital city, is progressing rapidly, attracting many tourists to Nepal. Key findings from the survey revealed that evaluations of infrastructure vary significantly depending on the region and living environment, with dissatisfaction regarding the cost burden and stability. Based on these results, this study proposes the following three approaches. These initiatives are expected to contribute to the improvement of Nepal's infrastructure, positively impacting the quality of life and overall societal development.

Keywords: Basic Infrastructure, Economic Development, Field Survey, Nepal.

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1 Introduction

In many countries and regions, the development of infrastructure that forms the foundation of residents' lives and industries is one of the essential elements for progress and development. These infrastructure disparities are intrinsically linked to economic inequalities. The United Nations SDGs Report 2023 indicates that in 2022, the per capita manufacturing value added in developed countries with established infrastructure was $5,093, while in developing countries, it was merely $159 (United Nations, 2023). Expanding infrastructure networks is therefore essential for poverty eradication and further economic development.

Reflecting this global trend, Nepal, one of South Asia's developing countries, has experienced consistent economic growth. According to the Embassy of Japan in Nepal (2025), the economic growth rates were 4.5% in 2020/21, 5.3% in 2021/22, 2.4% in 2022/23, and an estimated 4.5% in 2023/24, marking four consecutive years of positive growth. However, this rapid macroeconomic expansion has simultaneously exacerbated disparities in infrastructure provision between urban centers and rural municipalities, as well as across different income groups. Nepal’s unique geographical conditions further intensify these challenges. With an elevation difference of approximately 8,800 meters from north to south, Nepal has many mountain villages and rural areas lacking adequate living infrastructure. Furthermore, the only means of domestic travel are road transport and air travel, making the development of roads connecting urban and rural areas a critical national issue.

In response to these multifaceted structural hurdles, Nepal has committed to achieving all 17 Sustainable Development Goals (SDGs) by 2030, aiming for prosperity and sustainability. The nation is actively launching nationwide campaigns and considering investments in specific sectors to meet these targets (United Nations Nepal, 2025). This ambitious goal includes objectives related to fundamental infrastructure, such as water and urban development, highlighting the nation's increasing focus on infrastructure. Nevertheless, despite these ambitious policy targets, several critical challenges may remain unresolved. For instance, while infrastructure stability has improved in some areas, disparities between the capital and other regions remain. Furthermore, the economic burden acts as a barrier for low-income populations, making access to infrastructure difficult. This contradiction between rapid development and insufficient infrastructure highlights the need for a deeper understanding of public perceptions and expectations. Until now, discussions regarding Nepal's economic situation and living conditions, including the state of its infrastructure development, have often been based primarily on macro-level statistical data. However, to determine whether the current infrastructure is sufficient and to identify which infrastructure should be prioritized in the future, micro-level surveys and analyses focusing on the perspectives of residents actually living in Nepal are also extremely important.

Bridging this gap between macro-indicators and lived experiences, this study investigates Nepalese people's perceptions of basic infrastructure, including caste, age, region, education, and income levels. Through a field survey in Kathmandu and Pokhara, we clarify differences in infrastructure usage frequency and public awareness between demographic attributes. Through a field survey on the situation and

perspectives of local people regarding infrastructure, this study aims to discuss appropriate solutions to achieve desirable infrastructure development. This paper reports on the statistical analysis of survey data collected through a collaborative effort between universities in Nepal and Japan, conducted locally in Nepal among residents, and the insights that can be drawn from these results.

2 Preliminaries

2.1 Basic Information about Nepal

Nepal is a landlocked country situated in South Asia, bordering China to the north and India to the south. A significant portion of its territory consists of mountainous regions, including the Himalayas, characterized by extreme variations in elevation. These natural conditions present substantial physical barriers to the development of basic infrastructure, such as transportation networks, energy supply, and telecommunications.

Nepal transitioned from a monarchy to a federal democratic republic in 2008. While political stability has gradually improved, the nation still grapples with numerous challenges, including post-conflict reconstruction and addressing regional disparities.

In recent years, with support from international organizations and neighboring countries, infrastructure development has accelerated. For instance, hydropower capacity has increased from 1,446.8 MW in 2021 to 2,685 MW in 2024 (Japan International Cooperation Agency, 2024), leading to the export of surplus electricity to India. Nevertheless, this rapid development has not been uniformly distributed across the country, resulting in regional differences in infrastructure provision. Nepal relies on hydropower for over 90% of its electricity. While this leverages its abundant water resources, it also presents the challenge of an unstable power supply, particularly during the dry season, due to its heavy reliance on precipitation.

2.2 A Subsection Sample

As a developing nation, Nepal faces formidable challenges within its public infrastructure sector. One primary concern involves systemic inefficiencies in project management and quality control; Dhami (2025) underscores pervasive issues such as chronic cost overruns, project delays, and substandard construction quality that undermine public trust. A second critical dimension is the profound disparity across different sectors. In terms of sanitation, persistent inequities between households in rural municipalities remain unresolved (Banstola et al., 2024), while in the transport sector, significant gaps in safety and affordability persist even in the capital city of Kathmandu (Basnet et al., 2025).

In contrast to these specific micro-level challenges, other scholarly works have attempted to analyze the situation through macro-level or qualitative lenses. For instance, Shrestha et al. (2023) provided a comprehensive review of Water, Sanitation, and Hygiene (WASH) status in Nepal, emphasizing the gaps in effective service delivery and the necessity for sustainable infrastructure in developing contexts.

Furthermore, Pokharel et al. (2021) utilized macro-economic indicators—such as intercity travel time and regional GDP per capita—to confirm the core expectations of New Economic Geography, illustrating how transport improvements facilitate urbanization. Additionally, localized qualitative evidence from Devkota (2025) offers a detailed depiction of the practical issues surrounding infrastructure-related actions in semi-urban areas like Birendra Nagar, Surkhet.

Despite these valuable contributions, a significant gap remains in the existing literature: most studies are confined to isolated sectors or specific geographical regions, leaving a void in research that systematically captures public perception from a multifaceted perspective. Internationally, as demonstrated by Lee et al. (2022) in the South Korean context, service evaluation that links residents' "expectations" with their "actual perceptions"-rather than merely assessing the presence of physical assets-is indispensable for enhancing the quality of life.

To address this scholarly gap, the present study adopts the theoretical frameworks of Expectation–Disconfirmation Theory (Oliver, 1980) and the SERVQUAL model (Parasuraman et al., 1988). These theories define satisfaction as the resulting gap (disconfirmation) between perceived performance and prior expectations, evaluating service quality through multidimensional indicators such as reliability and responsiveness. Empirical applications of these frameworks across multiple infrastructure categories remain extremely rare in South Asia, particularly in Nepal. By simultaneously applying these models to various infrastructure sectors, this study aims to fill this void and provide an integrated, holistic understanding of citizens' perceptions.

3 Research Method

3.1 Research Objectives

The primary objective of this study is to quantify local residents' perceptions of infrastructure. We focused on six types of infrastructure: electricity, gas, water supply, telecommunications, roads, and public transportation. For each, we asked about current satisfaction levels and future service expectations. By analyzing the differences between current perceptions and future expectations, as well as variations in service across locations, we aim to identify the challenges perceived by residents and explore approaches for future development.

To facilitate this research, we designed a questionnaire in collaboration with students and faculty from a local university in Nepal (see Appendix I). This questionnaire was designed by taking into account previous research, while also discussing the items necessary to clarify the current state of basic infrastructure in Nepal and the needs of the residents.

The authors' research group has collaborated with universities in Nepal and Japan for over 20 years under the Nepal-Japan Project, conducting field surveys and analyses within Nepal (Bushell &Goto, 2011; Arai et al., 2017; Shimizu et al., 2018; Saito et al., 2020). This study also utilized the human resources of this project and the findings from previous investigations to conduct field research in Nepal. The survey was conducted

in two regions of Nepal: Kathmandu (urban) and Pokhara (suburban). The questionnaire included five types of questions regarding infrastructure: (1) Questions about frequency of use, (2) Questions about the perceived necessity of current and future improvements, (3) Questions about qualitative importance and growth potential.

Section 1: Frequency of Use questions covered the following items: Electricity, LPG (Propane Gas), Biogas, Firewood/Wood Resources, Tap Water, Natural River Water, Purchased Water (e.g., Bottled Water), Underground Water, Information & Communication Technology (e.g., Internet), Personal Vehicles (Car, Motorcycle, etc.), and Public Transport.

These questions utilized a five-point Likert scale, ranging from "Never (1)" to "Almost every day (5)." We analyzed the response patterns based on respondent attributes such as gender, caste, and region to reveal the realities and challenges in Nepal through statistical analysis. The Likert scale responses were converted to the following scores for analysis (see Table 1).

Table 1. Method of conversion (1)

Never	1
Rarely	2
Occasionally	3
Several times a week	4
Almost every day	5

Section 2: Current Status and Future Improvement Necessity questions covered six categories of infrastructure (electricity, gas, water supply, sewerage, information & communication technology, roads, public transport), primarily focusing on three evaluation axes: Availability, Stability, and Cost. Minor modifications, such as changes in terminology or adjustments to the number of evaluation axes, were made for specific items.

These questions also used a five-point Likert scale multiple-choice format. The responses were converted to the following scores for analysis (see Table 2).

Table 2. Method of conversion (2)

The current state	The necessity for improvement	Number
Strongly Bad	Strongly unnecessity	-2
Bad	Unnecessity	-1
Unsure	Unsure	0
Good	Necessity	1
Strongly Good	Strongly Necessity	2

3.2 Method of Conducting the Field Interview

To understand public awareness of infrastructure and challenges for future improvement, we conducted a questionnaire survey in Nepal. The survey team

consisted of 42 individuals, comprising Nepalese and Japanese university students. Nepalese students conducted interviews with local residents in Nepali and translated the responses into English. At the commencement of each interview, participants were verbally informed of the research objectives. The results of the responses by a respondent were written in English on a questionnaire sheet. Each time, a Nepalese student provided his/her partner (a Japanese student) with an explanation in English about the background of the responses. If the Japanese student had questions about the answers that they were curious about from a foreign perspective, he/she asked those in English, and the Nepalese student translated and asked the respondents in Nepali. Although this was a questionnaire survey, it was not simply a case of asking the respondents to write down their answers to questions on a questionnaire sheet; instead, it was an interview survey, and some of the information was collected through a qualitative survey.

The survey areas were Kathmandu (the capital city of Nepal) and Pokhara (a suburban area). The survey period was March 1 to March 6, 2025. We used a random sampling method, surveying a total of 392 citizens: 187 in Kathmandu and 205 in Pokhara.

Quantitative data were processed and analyzed using descriptive and comparative statistical techniques. To identify disparities in public perception, the mean scores and variance were calculated and compared across the six infrastructure categories and the two study regions (Kathmandu and Pokhara). The analysis of mean scores facilitated an understanding of overall trends in satisfaction and expectations, while the assessment of variance allowed for an evaluation of the consistency or heterogeneity of perceptions among the local residents. This dual approach enabled a robust identification of priority sectors and regional-specific infrastructure challenges.

For the qualitative data—comprising open-ended responses and contextual notes recorded during the interviews—an interpretative thematic analysis was employed. The members performed a close reading of the field notes to manually identify and categorize recurring themes related to infrastructure challenges and residents' expectations. This qualitative process focused on extracting nuanced insights and local contexts that were not fully captured by the numerical data. By synthesizing these thematic patterns, this study was able to provide a more comprehensive interpretation of the quantitative findings, ensuring that the statistical trends were understood within the specific socio-cultural framework of Nepal.

4 Results and Discussion

4.1 Overview of Respondents

For this study, we conducted a survey of 392 respondents, both male and female, across two regions in Nepal. Table 3 shows the distribution of respondents by place, gender, and caste. Occupations varied widely, including shopkeepers, farmers, homemakers, students, and others.

In this chapter, we show the results of analyzing the collected data from several perspectives to reveal differences in perceptions and trends. We performed comparisons by item, evaluation axis, caste, gender, and region.

Table 3. Distribution of the respondents according to place, gender, and caste (%)

Place	Kathmandu		Pokhara		
	53.20		47.70		
Gender	Male	Female	Other		
	49.74	45.92	0.77		
Caste	1	2	3	4	Other
	29.59	18.88	40.82	7.14	3.57

4.2 Comprehensive Comparison and Analysis by Item and Evaluation Axis

In Section 2, we surveyed perceptions across six infrastructure categories, primarily focusing on three evaluation axes: Availability, Stability, and Cost. Our goal was to understand response trends for both current satisfaction and future improvement necessity regarding each of these axes. Fig. 1 below illustrates the current satisfaction levels.

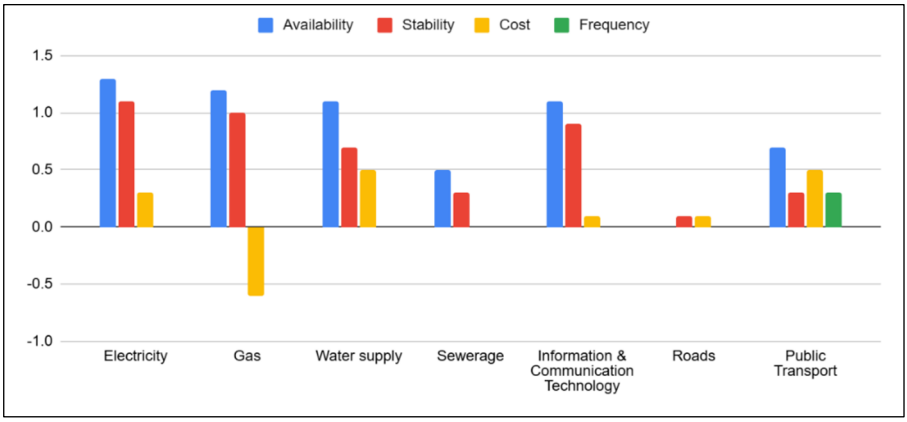

Fig. 1. Average Values for Each Item by Evaluation Axis (the current State)

The figure indicates that Availability generally shows high satisfaction for all items except Roads. Conversely, Cost satisfaction is low across all items except Public Transport. Roads exhibit overall low satisfaction.

The following figure pertains to the necessity of future improvements.

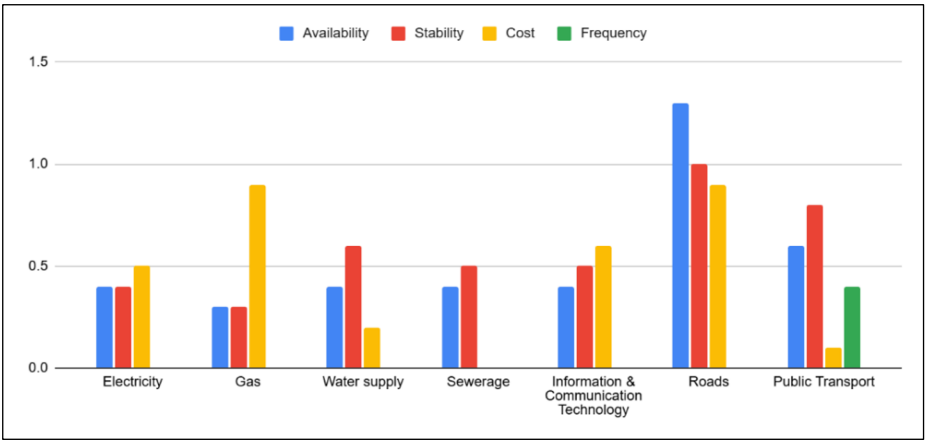

Fig. 2. Average Values for Each Item by Evaluation Axis (the necessity of improvement)

This figure reveals that Cost is ranked highest for Electricity, Gas, and Information & Communication Technology. Additionally, Roads show a very high necessity for improvement across all aspects. Notably, Availability and Stability maintain relatively consistent values across all items.

From this result, it is clarified that Cost is perceived as the most significant problem and the area most in need of improvement among the three evaluation axes. This is particularly true for Electricity and Gas, where costs fluctuate with usage, prompting a stronger demand for cost improvements. These patterns are consistent with Basnet et al. (2025), who emphasized affordability as a central barrier in urban transport, suggesting that economic burden is a pervasive issue across infrastructure categories. Furthermore, the consistently low satisfaction with Roads suggests a strong call for their improvement across the board. In line with this, Fig. 3 also shows that Roads was the most frequently selected infrastructure when respondents were asked which one they believed needed the most improvement in Section 3.

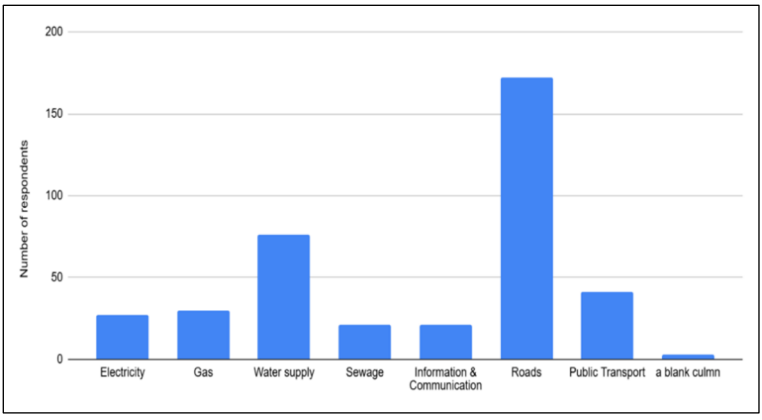

Fig. 3. Item Most in Need of Improvement Among the Six Categories

4.3 Stratified Comparison and Analysis by Caste and Gender

We compared Section 1 and Section 2 data based on caste and gender. From this analysis, no significant differences were observed. This suggests that one's caste or social standing does not primarily influence awareness of infrastructure, but rather by their current living environment, such as their region.

4.4 Stratified Comparison and Analysis by Place

For the 5-point Likert scale data (1-5 or -2-2) from Sections 1 and 2, I calculated the mean and standard deviation (SD) for all questions across each region. I used the standard deviation to understand the tendency of responses.

Regarding usage frequency, significant regional differences (where the difference is 0.5 or greater) were observed in Tap Water, Natural River Water, and Information & Communication Technology. Usage frequency for water resources is higher in Pokhara, while technology usage is higher in Kathmandu. Since no large differences were seen in the standard deviation, the response tendencies are considered similar.

Regarding the current satisfaction, no major regional differences were observed across any item. Items with a difference of 0.3 or greater include Water supply/Safety & Stability, Sewerage/Availability, Roads/Stability, and Public Transport/Stability. Similar to usage frequency, awareness regarding water resources shows a difference between urban and suburban areas. Additionally, for Roads and Public Transport, stability appears to be lower in the urban area of Kathmandu, which contradicts the assumption that infrastructure is more developed in urban areas.

Similarly, regarding the necessity for future improvements, items with a difference of 0.3 or greater include Gas/Stability, Water supply/Availability, Water supply/Safety & Stability, Sewerage/Availability, Roads/Stability, Roads/Cost, and Public Transport/Stability. We will examine the factors contributing to these differences, focusing on water resources and stability.

Table 4. Average and Standard Deviation of Infrastructure Usage Frequency

Question items	All or stratified data	Average	SD
1-1 Electricity	All data	2.6	1.73
	Pokhara	2.7	1.78
	Kathmandu	2.4	1.67
1-2 LPG	All data	4.9	0.34
	Pokhara	5.0	0.10
	Kathmandu	4.9	0.48
1-3 Biogas	All data	4.8	0.72
	Pokhara	4.8	0.63
	Kathmandu	4.8	0.82
1-4 Firewood/Wood Resources	All data	1.1	0.50
	Pokhara	1.1	0.55
	Kathmandu	1.1	0.45
1-5 Tap Water	All data	2.0	1.35
	Pokhara	2.4	1.50
	Kathmandu	1.5	0.98
1-6 Natural River Water	All data	4.3	1.30
	Pokhara	4.7	0.82
	Kathmandu	3.9	1.56
1-7 Purchased Water	All data	1.4	1.00
	Pokhara	1.6	1.12
	Kathmandu	1.3	0.83
1-8 Information & Communication Tech	All data	3.5	1.63
	Pokhara	3.2	1.78
	Kathmandu	3.8	1.40
1-9 Personal Vehicles	All data	4.7	0.96
	Pokhara	4.6	1.00
	Kathmandu	4.7	0.91
1-10 Public Transport	All data	2.9	1.87
	Pokhara	3.0	1.90
	Kathmandu	2.8	1.84
1-11 Underground water	All data	3.2	1.33
	Pokhara	3.1	1.31
	Kathmandu	3.3	1.34

Table 5. Average Values and Standard Deviations for Six Infrastructure Items (The current state and the necessity of improvement)

Question Items	All or stratified data	Average (the current state)	Average (the necessity of improvement)
Electricity/Availability	All data	1.3	0.4
	Pokhara	1.2	0.3
	Kathmand	1.4	0.4
Electricity/Stability	All data	1.1	0.4
	Pokhara	1.0	0.4
	Kathmand	1.2	0.5
Electricity/Cost	All data	0.3	0.5
	Pokhara	0.3	0.4
	Kathmand	0.4	0.6
Gas/Availability	All data	1.2	0.3
	Pokhara	1.2	0.2
	Kathmand	1.1	0.4
Gas/Stability	All data	1.0	0.3
	Pokhara	1.1	0.2
	Kathmand	1.0	0.5
Gas/Cost	All data	-0.6	0.9
	Pokhara	-0.6	0.9
	Kathmand	-0.6	1.0
Water supply/ Availability	All data	1.1	0.4
	Pokhara	1.1	0.3
	Kathmand	1.0	0.6
Water supply/ Safety & Stability	All data	0.7	0.6
	Pokhara	0.8	0.4
	Kathmand	0.5	0.9
Water supply/Cost	All data	0.5	0.2
	Pokhara	0.6	0.1
	Kathmand	0.5	0.3
Sewerage/Availability	All data	0.5	0.4
	Pokhara	0.3	0.3
	Kathmand	0.7	0.6
Sewerage/Stability	All data	0.3	0.5
	Pokhara	0.3	0.2
	Kathmand	0.4	0.7
ICT/Availability	All data	1.1	0.4
	Pokhara	1.0	0.3
	Kathmand	1.2	0.5
ICT /Stability	All data	0.9	0.5
	Pokhara	0.9	0.4
	Kathmand	0.9	0.6
ICT/Cost	All data	0.1	0.6
	Pokhara	0.1	0.7
	Kathmand	0.1	0.6
Roads/Maintenance Level	All data	0.0	1.3
	Pokhara	0.1	1.2
	Kathmand	0.0	1.3
Roads/Stability	All data	0.1	1.0
	Pokhara	0.2	0.9

	Kathmand	-0.1	1.2
Roads/Cost	All data	0.1	0.9
	Pokhara	0.2	0.8
	Kathmand	0.0	1.1
Public Transport/ Availability	All data	0.7	0.6
	Pokhara	0.7	0.5
	Kathmand	0.8	0.7
Public Transport/ Frequency	All data	0.5	0.4
	Pokhara	0.5	0.4
	Kathmand	0.5	0.5
Public Transport/ Stability	All data	0.3	0.8
	Pokhara	0.5	0.6
	Kathmand	0.1	0.9
Public Transport/ Cost	All data	0.5	0.1
	Pokhara	0.4	0.2
	Kathmand	0.6	0.1

Regarding water resources, a clear regional disparity was observed. Kathmandu residents expressed a stronger demand for improvement than those in Pokhara, consistent with differences in usage frequency and current satisfaction. This pattern suggests that greater urban reliance on piped water and sewerage heightens expectations and, consequently, dissatisfaction with service quality. Such findings align with international evidence, including Lee et al. (2022), which indicates that higher baseline access often results in greater expectations for stability and quality.

5 Conclusions

This study investigated citizens' perceptions of six types of infrastructure in Nepal and revealed several key findings. First, dissatisfaction with cost was consistently high across all categories, particularly for electricity and gas, where price fluctuations led to strong calls for improvement. Second, roads recorded both the lowest satisfaction and the highest necessity for improvement, making them the most urgent priority. Third, while caste and gender showed little influence, regional differences emerged clearly: Kathmandu residents expressed stronger dissatisfaction and demand for improvement, especially regarding water supply and sewerage. This suggests that higher reliance on infrastructure in urban areas intensifies expectations, a finding consistent with international studies such as Lee et al. (2022).

Based on these findings, my final recommendations for infrastructure improvement are threefold: (1) nationwide road development; (2) securing supply sources to enhance the stability and reduce the cost of essential utilities (electricity, gas); and (3) eliminating regional disparities in the quality of water supply and sewerage systems

Ultimately, the goal is to eliminate regional disparities across all infrastructure sectors in the future, ensuring satisfaction across all evaluation axes. Future objectives will also include exploring citizens' attitudes towards infrastructure maintenance and improvement, and how their public service utilization behaviors are shaped.

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Appendix 1

Date: / No. Interviewer: / Place: Kathmandu / Pokhara

Questionnaire about awareness of Basic Infrastructure for Living

Name: Gender: Male / Female / Others Caste or Ethnic background: Age:

Job: ☐farmer ☐shopkeeper ☐tourism ☐related to education(teacher) ☐other ( )

Academic achievement: ☐elementary school edu. ☐lower secondary edu. ☐secondary edu. ☐higher edu.

Monthly income(NRs) : ☐Below 20,000 ☐20,001-30,000 ☐30,001-10,000 ☐10,001-50,000 ☐Over 50,001-

1. Infrastructure Usage : Please answer how frequently you use the following infrastructures:

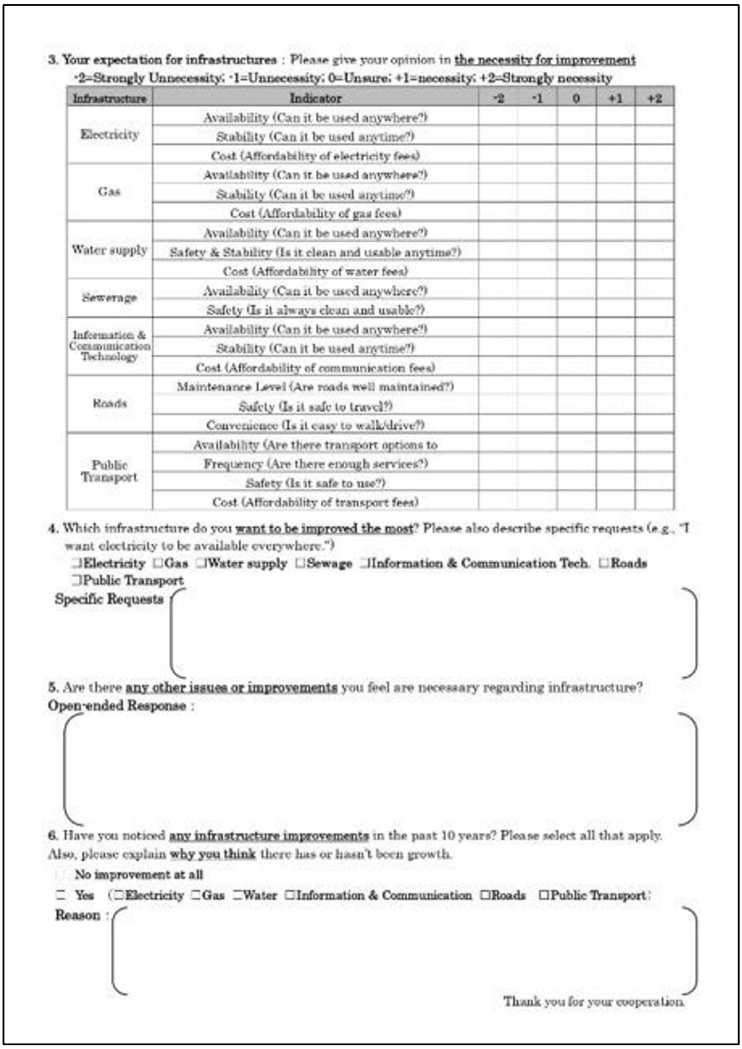
1=Never; 2=Rarely; 3=Occasionally; 4=Several times a week; 5=Almost

Infrastructure	1	2	3	4	5
Electricity Usage Frequency					
LPG (Propane Gas) Usage Frequency					
Biogas Usage Frequency					
Firewood/Wood Resources Usage Frequency					
Tap Water Usage Frequency					
Natural River Water Usage Frequency					
Purchased Water (e.g., Bottled Water) Usage Frequency					
Information & Communication Tech. (e.g., Internet) Usage Frequency					
Personal Vehicles (Car, Motorcycle, etc.) Usage Frequency					
Public Transport Usage Frequency					
Which transport do you use? (e.g., bus, private car, taxi, etc.)					

2. Current situation of the infrastructures : Please give your opinion on the current state of infrastructure.

-2=Strongly Bad; -1=Bad; 0=Unsure; +1=Good; +2=Strongly Good

Infrastructure	Indicator	-2	-1	0	+1	+2
Electricity	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of electricity fees)					
Gas	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of gas fees)					
Water supply	Availability (Can it be used anywhere?)					
	Safety & Stability (Is it clean and usable anytime?)					
	Cost (Affordability of water fees)					
Sewerage	Availability (Can it be used anywhere?)					
	Safety (Is it always clean and usable?)					
Information & Communication Technology	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of communication fees)					
Roads	Maintenance Level (Are roads well maintained?)					
	Safety (Is it safe to travel?)					
	Convenience (Is it easy to walk/drive?)					
Public Transport	Availability (Are there transport options to					
	Frequency (Are there enough services?)					
	Safety (Is it safe to use?)					
	Cost (Affordability of transport fees)					



3. Your expectation for infrastructures : Please give your opinion in the necessity for improvement
-2=Strongly Unnecessity; -1=Unnecessity; 0=Unsure; +1=necessity; +2=Strongly necessity

Infrastructure	Indicator	-2	-1	0	+1	+2
Electricity	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of electricity fees)					
Gas	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of gas fees)					
Water supply	Availability (Can it be used anywhere?)					
	Safety & Stability (Is it clean and usable anytime?)					
	Cost (Affordability of water fees)					
Sewerage	Availability (Can it be used anywhere?)					
	Safety (Is it always clean and usable?)					
Information & Communication Technology	Availability (Can it be used anywhere?)					
	Stability (Can it be used anytime?)					
	Cost (Affordability of communication fees)					
Roads	Maintenance Level (Are roads well maintained?)					
	Safety (Is it safe to travel?)					
	Convenience (Is it easy to walk/drive?)					
Public Transport	Availability (Are there transport options to					
	Frequency (Are there enough services?)					
	Safety (Is it safe to use?)					
	Cost (Affordability of transport fees)					

4. Which infrastructure do you want to be improved the most? Please also describe specific requests (e.g., "I want electricity to be available everywhere.")
☐Electricity ☐Gas ☐Water supply ☐Sewage ☐Information & Communication Tech. ☐Roads ☐Public Transport
Specific Requests

5. Are there any other issues or improvements you feel are necessary regarding infrastructure?
Open-ended Response :

6. Have you noticed any infrastructure improvements in the past 10 years? Please select all that apply. Also, please explain why you think there has or hasn't been growth.
☐ No improvement at all
☐ Yes (☐Electricity ☐Gas ☐Water ☐Information & Communication ☐Roads ☐Public Transport)
Reason :

Thank you for your cooperation.