E-ISSN: 2706-8927
P-ISSN: 2706-8919
www.allstudyjournal.com
IJAAS 2025; 7(8): 118-126
Received: 02-07-2025
Accepted: 07-08-2025

Dr. Jyotirmoy Koley
WBES,
Assistant Professor,
Department of Commerce,
Darjeeling Government College, Darjeeling, West Bengal, India

Corresponding Author:
Dr. Jyotirmoy Koley
WBES,
Assistant Professor,
Department of Commerce,
Darjeeling Government College, Darjeeling, West Bengal, India

Socio-economic status of people in the urban slums in darjeeling town: An analytical study

Jyotirmoy Koley

DOI: https://www.doi.org/10.33545/27068919.2025.v7.i8b.1628

Abstract
The socioeconomic status of residents in the urban slums of Darjeeling Town, West Bengal, India, represents a critical issue with significant implications for the overall development and health of these communities. This study employs empirical analysis, utilizing primary data collected through structured questionnaires and secondary data from research articles, publications, and websites, to examine the socioeconomic characteristics of households in Darjeeling's urban slums. The findings indicate that 80% of surveyed households communicate in Nepali, 70% identify as Hindus, and 30% each belong to the Unreserved and Scheduled Caste categories. In terms of socioeconomic profile, 30% were engaged in small businesses and service sectors, 40% fell within the low-income group, 60% had family sizes of 4 to 6 members, 40% resided in semi-pucca houses, 50% lived in areas with very steep slopes, and 40% were located far from the main road. Significant associations were identified between the annual income level and occupation, education, family size, housing type, distance from the main road, education and occupation, and distance from the main road and housing type. These findings underscore the interconnected nature of socioeconomic factors in slum areas and the necessity for targeted interventions to enhance education, employment opportunities, housing, and basic services. This study underscores the urgent need for comprehensive urban planning and development strategies that prioritize the needs of slum communities in Darjeeling Town to create more inclusive, resilient, and sustainable urban environments.

Keywords: Urban slums, Darjeeling Town, socioeconomic status, empirical analysis, household characteristics, income level, housing conditions, access to services, urban planning, sustainable development, etc.

Introductions
The socioeconomic status of individuals residing in urban slums is a critical issue that significantly impacts the overall development and health of communities. In the context of urban slums in Darjeeling Town, an analysis of this status reveals substantial challenges and areas requiring improvement. Typically, urban slums are characterized by substandard living conditions and insufficient access to essential services, resulting in negative health and socioeconomic outcomes for their residents. These settlements have emerged from rapid urbanization, a phenomenon observed globally, as documented in various studies across different regions. Informal settlements are prevalent worldwide, accommodating hundreds of millions of individuals and exerting a multifaceted impact on health and well-being due to spatial segregation, economic instability, inadequate housing, and limited access to essential services, such as water and sanitation (Corburn & Sverdlik, 2018) [5]. In Bangladesh, urban slums exhibit significant disparities compared to the rest of the country, notably affecting health and nutrition, particularly among children, where slum areas report higher rates of stunting and underweight conditions than non-slum areas (Ahsan *et al*., 2017) [1]. This underscores the socioeconomic challenges faced by slum residents, often exacerbated by limited educational opportunities and substandard living conditions. In regions such as Dhaka and Gazipur, the socioeconomic and health conditions of slum residents are influenced by factors including migration status, household wealth, and access to health services. Notably, individuals who recently migrated encounter heightened difficulties in obtaining maternal and child health services (Razzaque *et al*., 2019) [12]. Comparable patterns are evident in other slum areas, such as those in Jammu City, where spatial inequalities contribute to substandard living conditions and hinder socioeconomic development (Farooq *et al*., 2022) [6]. The situation in Nairobi's slums exemplifies that despite some advancements

in socio-economic indicators and public services, substantial disparities persist when compared to formal urban areas. This indicates the ongoing challenges in infrastructure and service provision (Bird *et al*., 2017) [2]. In the context of Darjeeling Town, understanding the socio-economic framework of its urban slums necessitates an examination of global patterns in conjunction with local specificities, such as the influence of migration, availability of infrastructure, and economic opportunities. Addressing socioeconomic vulnerabilities requires targeted interventions, which may include policy planning aimed at uplifting underprivileged populations, as highlighted in various studies. Such interventions could encompass community engagement, infrastructure improvements, and equitable access to educational and health services to mitigate the adverse effects of residing in slum environments (Khan *et al*., 2023) [7].

2. Literature Review

Many scholars and researchers have conducted several studies on various aspects of the socio-economic conditions affecting rural and urban populations across the nation. The selection of the most pertinent studies is reviewed and presented below.

Chhetri (2020) [4] investigated slum proliferation in the town of Kalimpong, Darjeeling Himalayas. This study shows that Kalimpong has the highest number of slums regionally due to urbanization and migration. The research surveyed seven slum areas' socioeconomic conditions and housing, examining demographics and physiographical features. The findings show that the inhabitants are socioeconomically disadvantaged, with substandard housing and poor infrastructure. Slums are concentrated near main roads and steep slopes, affecting sanitation and living standards. The study recommends policy interventions for infrastructure development and waste management while emphasizing resident empowerment through skill development for sustainable urban growth.

Srikumar and Babu (2023) [15] analysed tribal communities in Kerala and examined their demographics, living conditions, and challenges. The study focused on tribes such as Irular, Paniyan, and Ulladan, and examined their lifestyles and distribution. Despite these advancements, these communities face poverty, illiteracy, poor health, and limited access to basic amenities. This study notes a shift from joint to nuclear families due to education and employment, affecting traditional social bonds. This study emphasizes the need for targeted development programs to improve socioeconomic status.

Rai (2019) [11] investigated the socioeconomic conditions of tea plantation workers in Darjeeling, India, where the industry faces stagnation and labour disputes. The study examined the Balasun Tea Estate, focusing on workers' demographics, conditions, income, housing, education, and healthcare through surveys, interviews, and secondary data. The findings show that most workers are from Scheduled Tribes with multigenerational estate residences. Workers face low wages, poor housing, and limited access to education and healthcare, with younger workers migrating because of limited opportunities. Despite labour laws, tea plantation workers continue to face exploitation and poor conditions. This study recommends measures to improve workers' socioeconomic conditions to prevent industry stagnation.

Sharma (2014) [14] examined living conditions and reasons people leave their villages in Darjeeling, India. The study focused on people's economic status, why they move away, and whether moving is a good way to survive. It included eight villages, surveying 120 families and 80 people who moved. The study found that people leave to earn more money because there are not enough jobs in the village, and due to debt. Those who moved learned more about government programmes and banking. Most participants were happy with their new jobs and were paid better. This study suggests that if managed well, moving can help poor people by increasing their income, skills, and quality of life.

Mondal (2018) [8] studied the social and economic conditions of tribal people in Mukundapur village, West Bengal. The research examined social and economic factors, education, income, and how tribal people make a living. The study took place in Mukundapur village, Dhaniakhali Block of Hooghly district, with 850 people, including 360 Scheduled Tribes (ST) members. Fifty-seven households were examined using both numbers and stories, 57 households were examined. The ST community had more females (54%) than males (46%), with the highest literacy in the 11-15 age group. Most families (52%) earn 15,000-25,000 rupees per year, mainly by farming and raising animals. The study found that ST individuals had low education levels and stressed the need to boost interest in education, highlighting the positive impact of government programs, such as Kanyashree and Sabuj Sathi. They concluded that better education could improve jobs and income, helping tribal people's social and economic status.

Bonela *et al*., (2018) [3] looked at the living conditions and spending habits in three slums in Visakhapatnam, India: PedaJalaripeta, Indira Nagar Colony, and Chitti Babu Colony. They gathered information by visiting their homes and using questionnaires. The study checked details such as age, gender, family size, education, social groups, ration cards, jobs, and income. It also examined housing, ownership, utilities, and home facilities. This research studied spending on food and other items. This paper points out that slums in Visakhapatnam are growing because of industrialization and poor living conditions. This emphasizes the need for research and development in these areas.

Rai (2018) [10] studied how the Darjeeling Hills developed economically and became more urban. Before the British took over, the area was mostly forested. Development began after the British took control of it in 1835. The tea, forestry, cinchona plantation, trade, and tourism industries have contributed to this growth. Its population grew from 22,000 in 1869 to 249,117 in 1901. Darjeeling turned into a city with the help of British and Scottish missionaries. This study shows that growing the economy without caring for the environment causes harm. The author suggests sustainable development for lasting growth and strength in the Darjeeling Hills. The study highlights the change from forest to city and the environmental problems that came with it.

Saikia *et al*., (2022) [13] studied the economic status of people in rural Assam, focusing on their incomes. Data were collected from 80 families in the Golaghat Central Development Block. They examined factors such as population, education, jobs, housing, sanitation, and fuel use. The study found that, as family size increased, income decreased. Higher education led to higher incomes. People with higher-level jobs earn more. Better housing and

sanitation were linked to higher income. People with more money saved are better. Although the overall economic status was good, there were significant differences between income groups. Poorer groups had trouble with education, employment, and sanitation. This study suggests improving schools, creating job programs, and helping poor people with special plans.

3. Research gap

Many studies have examined socio-economic conditions in different parts of India, such as city slums, tea farms, and tribal areas. However, few studies have compared these different locations in a single study. Comparing the socio-economic conditions in city slums, tea farms, and tribal areas in the Darjeeling region can provide important insights. It can reveal unique problems and opportunities for different groups in the same area. This research can help find common factors affecting socioeconomic status in these places. It can also guide policies to reduce poverty, improve living conditions, and support sustainable development in the region.

4. Significance of the study

Understanding the socioeconomic status of Darjeeling Town's urban slum residents is crucial for effective urban planning. Rapid urbanization leads to slum formation, presenting challenges in housing, health, and basic services (Ooi & Phua, 2007) [9]. In Darjeeling, with its increasing population and urban growth, analysing the socio-economic factors contributing to slum expansion is essential (Suthar *et al*., 2024) [16]. Slum dwellers face vulnerabilities including limited education, low income, and poor healthcare access, compounded by inadequate sanitation and pollution (Khan *et al*., 2023; Ahsan *et al*., 2017) [7, 1]. Research in similar environments has shown that socioeconomic indicators, such as maternal education and household economics, significantly impact health outcomes. These insights are vital for developing policies to reduce poverty and improve quality of life in slum communities (Bird *et al*., 2017; Razzaque *et al*., 2019) [2, 12]. Understanding these factors will enable policymakers to create targeted solutions for sustainable urban development.

5. Objective of the study

This study examines the socioeconomic status of urban slum areas in Darjeeling.

6. Methodology

This study employs empirical analysis using primary and secondary data. Primary data have been collected through structured questionnaires focusing on the socioeconomic aspects of households in Darjeeling's urban slums. Secondary data have been obtained from the research articles, publications, and websites. Darjeeling's slums are located in the lower regions of the Darjeeling-Jalapahar ridge, below tourist and residential zones, including areas such as Lower Rockhood, Mangalpuri, Pragati Gram, and Dr. Zakir Hussian Busty. These areas face high population density, inadequate housing, limited essential services, and landslide vulnerability owing to steep slopes. Slum formation resulted from rapid urbanization and migration from Nepal, Bihar, and the surrounding areas. Slums existed in most wards except affluent areas, increasing from 3 in 1981 to 37 in 2001, with a slum population of 11.72% in 2011. Eight slum areas with 15 households each have been selected, totaling 120 households, using stratified random sampling from June to August 2025. Variables, including language, religion, caste, education, occupation, income, family size, housing, and infrastructure, were analyzed using frequency tables, percentages, and chi-square tests using SPSS (version 26).

7. Formulation of hypothesis

Seven different sets of hypotheses have been formulated to achieve the research objectives. These are shown below.

H1: There is no association between annual income level and occupation of slum dwellers.

H2: There is no association between annual income level and the education of slum dwellers.

H3: There is no association between education and occupation of slum dwellers.

H4: There is no association between annual income level and family size of slum dwellers.

H5: There is no association between annual income level and housing type of slum dwellers.

H6: There is no association between annual income level and distance from the main road of slum dwellers.

H7: There is no association between distance from the main road and the housing type of slum dwellers.

8. Analysis and discussion

This section of the study is organized into two subsections: (i) demographic and socioeconomic characteristics of the households of slum dwellers in Darjeeling town, and (ii) hypothesis testing using the chi-square test. These subsections are discussed in detail below:

8.1 Demographic and socio-economic portfolio

8.1.1 Language of the respondents

Table 1: Distribution of respondents by language

Language		
Language	**Frequency**	**Percent**
Bengali	12	10
Hindi	12	10
Nepali	96	80
Total	120	100

Source: Field Survey

Observation: Analysis of the data presented in the table reveals that 80% of the surveyed households communicate in Nepali, while 10% of the respondents use Hindi and Bengali.

8.1.2 Religion of the respondents

Table 2: Distribution of respondents by religion

Religion		
Religion	**Frequency**	**Percent**
Hindu	84	70
Buddhist	12	10
Christian	12	10
Muslim	12	10
Total	120	100

Source: Field survey

Observation: According to the data presented in the table, 70% of the household respondents identified as Hindus, while 10% are Buddhist, Christian, and Muslim.

8.1.3 Caste of the respondents

Table 3: Distribution of respondents by caste

Caste		
Caste	**Frequency**	**Percent**
Unreserve	36	30
SC	36	30
ST	24	20
OBC	24	20
Total	120	100

Source: Field survey

Observation: The table above indicates that 30% of the respondents are from the Unreserved and Scheduled Caste (SC) categories, while 20% of the respondents belong to the Scheduled Tribe (ST) and Other Backward Classes (OBC) categories.

8.1.4 Education of the respondents

Table 4: Distribution of respondents by education

Education		
Education	**Frequency**	**Percent**
Primary	24	20
MP	24	20
HS	36	30
UG	24	20
PG	12	10
Total	120	100

Source: Field survey

Observation: The table above indicates that 30% of the respondents have completed high school, while 10% possess a postgraduate degree.

8.1.5 Occupation of the respondents

Table 5: Distribution of respondents by occupation

Occupation		
Occupation	**Frequency**	**Percent**
Small business	36	30
Service	36	30
Retired	12	10
Hotel worker	12	10
Daily labour	12	10
Agricultural labour	12	10
Total	120	100

Source: Field survey

Observation: An analysis of the data presented in the table reveals that 30% of the respondents are engaged in small businesses and various service sectors. In contrast, 10% of the respondents are categorized as retired employees, hotel workers, daily laborers, and agricultural laborers, respectively.

8.1.6 Annual income level of the respondents

Table 6: Distribution of respondents by annual income level

Annual income level		
Annual income level	**Frequency**	**Percent**
Very low income	24	20
Low income	48	40
Moderate income	12	10
Middle income	36	30
Total	120	100

Source: Field survey

Observation: In the present study, four distinct income categories have been delineated for the slum households in Darjeeling town: up to Rs. 50,000 (very low income), Rs. 50,001 to Rs. 100,000 (low income), Rs. 100,001 to Rs. 150,000 (moderately low income), and above Rs. 150,000 (middle income). The accompanying table indicates that 40% of respondents are classified within the low-income group, 30% within the middle-income group, 20% within the very low-income group, and 10% within the moderately low-income group among the households residing in the slum areas.

8.1.7 Family size of the respondents

Table 7: Distribution of respondents by family size

Family Size		
Family Size	**Frequency**	**Percent**
Upto 3	24	20
4 to 5	72	60
7 and above	24	20
Total	120	100

Source: Field survey

Observation: Analysis of the data presented in the table reveals that 60% of the respondents have a family size ranging from four to six members. In contrast, 20% of the respondents have a family size of up to three members, and another 20% have a family size exceeding seven members.

8.1.8 Housing type of the respondents

Table 8: Distribution of respondents by housing type

Housing type		
Housing type	**Frequency**	**Percent**
Pucca	36	30
Semi-Pucca	48	40
Kutcha	36	30
Total	120	100

Source: Field survey

Observation: The table indicates that 40% of the respondents resided in semi-pucca houses, while 30% of the respondents inhabited either pucca or kutcha houses.

8.1.9 Slope of the area of the respondents

Table 9: Distribution of respondents by slope of the area

Slope of the area		
Slope of the area	**Frequency**	**Percent**
Very steep	60	50
Steep	24	20
Gentle	36	30
Total	120	100

Source: Field survey

Observation: The above table shows that 50% of the respondents stay at a very steep slope of the area, 20% of the respondents stay in steep areas, and 30% of the respondents stay in a gentle area.

8.1.10 Distance from the main road of the respondents

Table 10: Distance from the main road

Distance from the main road		
Distance from the main road	**Frequency**	**Percent**
Very near	36	30
Near	12	10
Far	48	40
Very far	24	20
Total	120	100

Source: Field survey

Observation: In this study, slum areas have been categorized based on their proximity to the main road into four distinct classifications: very near (less than 100 meters), near (100 to 300 meters), far (300 to 500 meters), and very far (more than 500 meters). An analysis of the data presented in the table indicates that 40% of respondents reside far from the main road, 30% reside very near the main road, 20% reside very far from the main road, and 10% reside near the main road.

8.1.11 Water disposal of the respondents

Table 11: Distribution of respondents by waste disposal

Waste disposal		
Waste disposal	**Frequency**	**Percent**
Municipality van	60	50
Collection van	36	30
Jhora and road side	24	20
Total	120	100

Source: Field survey

Observation: The table above indicates that 50% of respondents report that their waste is collected by a municipal vehicle, while 20% of respondents indicate that they dispose of their waste in Jhora and along the roadside.

8.1.12 Water source of the respondents

Table 12: Distribution of respondents by water source

Water Source		
Water source	**Frequency**	**Percent**
Municipality taps	84	70
Jhoras	24	20
Springs	12	10
Total	120	100

Source: Field survey

Observation: According to the data presented in the table, 70% of respondents obtained their drinking water from municipal taps, while 10% sourced their drinking water from springs.

8.2 Hypothesis testing

8.2.1 Chi-square test: The present study employs the chi-square test to evaluate the hypothesis that two categorical variables are independent of each other. Specifically, it examines whether there is a significant difference in the averages of the two variables.

8.2.1.1 Hypotheis-1

H_0: There is no association between annual income level and occupation of slum dwellers.

H_1: There is an association between annual income level and occupation of slum dwellers.

Table 13: Crosstabulation between annual income level and occupation

Crosstabulation between Annual Income Level and Occupation									
			Occupation						Total
			Small Business	**Service**	**Retired**	**Hotel Worker**	**Daily Labour**	**Agricultural Labour**	
Annual Income Level	Very Low Income	Number	0	0	0	0	12	12	24
		% of Total	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	20.00%
	Low Income	Number	36	0	0	12	0	0	48
		% of Total	30.00%	0.00%	0.00%	10.00%	0.00%	0.00%	40.00%
	Moderate Income	Number	0	0	12	0	0	0	12
		% of Total	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	10.00%
	Middle Income	Number	0	36	0	0	0	0	36
		% of Total	0.00%	30.00%	0.00%	0.00%	0.00%	0.00%	30.00%
Total		Number	36	36	12	12	12	12	120
		% of Total	30.00%	30.00%	10.00%	10.00%	10.00%	10.00%	100.00%

Source: Compiled by researcher

Table 14: Chi-square test results for association between variables

Chi-square tests			
	Value	**df**	**Asymptotic significance (2-sided)**
Pearson chi-square	360	15	0.000
Likelihood ratio	307.165	15	0.000
Linear-by-linear association	30.576	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between annual income level and occupation of slum dwellers.

8.2.1.2 Hypothesis-2

H_0: There is no association between annual income level and the education of slum dwellers.

H_1: There is an association between annual income level and the education of slum dwellers.

Table 15: Crosstabulation between annual income level and education

Crosstabulation between annual income level and education								
			Education					Total
			Primary	MP	HS	UG	PG	
Annual income level	Very low income	Number	24	0	0	0	0	24
		% of Total	20.00%	0.00%	0.00%	0.00%	0.00%	20.00%
	Low income	Number	0	24	24	0	0	48
		% of Total	0.00%	20.00%	20.00%	0.00%	0.00%	40.00%
	Moderate income	Number	0	0	12	0	0	12
		% of Total	0.00%	0.00%	10.00%	0.00%	0.00%	10.00%
	Middle income	Number	0	0	0	24	12	36
		% of Total	0.00%	0.00%	0.00%	20.00%	10.00%	30.00%
Total		Number	24	24	36	24	12	120
		% of Total	20.00%	20.00%	30.00%	20.00%	10.00%	100.00%

Source: Compiled by researcher

Table 16: Chi-square test results for association between variables

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	260	12	0.000
Likelihood ratio	261.336	12	0.000
Linear-by-linear association	103.133	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between annual income level and the education of slum dwellers.

8.2.1.3 Hypothesis-3

H_0: There is no association between education and occupation of slum dwellers.

H_1: There is an association between education and occupation of slum dwellers.

Table 17: Crosstabulation between occupation and education

Crosstabulation between occupation and education								
			Education					Total
			Primary	MP	HS	UG	PG	
Occupation	Small Business	Number	0	12	24	0	0	36
		% of Total	0.00%	10.00%	20.00%	0.00%	0.00%	30.00%
	Service	Number	0	0	0	24	12	36
		% of Total	0.00%	0.00%	0.00%	20.00%	10.00%	30.00%
	Retired	Number	0	0	12	0	0	12
		% of Total	0.00%	0.00%	10.00%	0.00%	0.00%	10.00%
	Hotel Worker	Number	0	12	0	0	0	12
		% of Total	0.00%	10.00%	0.00%	0.00%	0.00%	10.00%
	Daily Labour	Number	12	0	0	0	0	12
		% of Total	10.00%	0.00%	0.00%	0.00%	0.00%	10.00%
	Agricultural Labour	Number	12	0	0	0	0	12
		% of Total	10.00%	0.00%	0.00%	0.00%	0.00%	10.00%
Total		Number	24	24	36	24	12	120
		% of Total	20.00%	20.00%	30.00%	20.00%	10.00%	100.00%

Source: Compiled by researcher

Table 18: Chi-square test results for association between variables

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	293.333	20	0.000
Likelihood ratio	282.049	20	0.000
Linear-by-linear association	50.21	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between education and occupation of slum dwellers.

8.2.1.4 Hypothesis-4

H_0: There is no association between annual income level and family size of slum dwellers.

H_1: There is an association between annual income level and family size of slum dwellers.

Table 19: Crosstabulation between annual income level and family size

Crosstabulation between annual income level and family size						
			Family size			Total
			Upto 3	4 to 5	7 and above	
Annual income level	Very low income	Number	12	12	0	24
		% of Total	10.00%	10.00%	0.00%	20.00%
	Low income	Number	12	36	0	48
		% of Total	10.00%	30.00%	0.00%	40.00%
	Moderate income	Number	0	12	0	12
		% of Total	0.00%	10.00%	0.00%	10.00%
	Middle income	Number	0	12	24	36
		% of Total	0.00%	10.00%	20.00%	30.00%
Total		Number	24	72	24	120
		% of Total	20.00%	60.00%	20.00%	100.00%

Source: Compiled by researcher

Table 20:

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	86.667	6	0.000
Likelihood ratio	94.981	6	0.000
Linear-by-linear association	59.5	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between annual income level and family size of slum dwellers.

8.2.1.5 Hypothesis-5

H_0: There is no association between annual income level and housing type of slum dwellers.

H_1: There is an association between annual income level and housing type of slum dwellers.

Table 21: Crosstabulation between annual income level and housing type

Crosstabulation between annual income level and housing type						
			Housing type			Total
			Pucca	Semi-pucca	Kutcha	
Annual income level	Very low income	Number	0	0	24	24
		% of Total	0.00%	0.00%	20.00%	20.00%
	Low income	Number	0	36	12	48
		% of Total	0.00%	30.00%	10.00%	40.00%
	Moderate income	Number	0	12	0	12
		% of Total	0.00%	10.00%	0.00%	10.00%
	Middle income	Number	36	0	0	36
		% of Total	30.00%	0.00%	0.00%	30.00%
Total		Number	36	48	36	120
		% of Total	30.00%	40.00%	30.00%	100.00%

Source: Compiled by researcher

Table 22: Chi-square test results for association between variables

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson chi-square	187.5	6	0.000
Likelihood ratio	207.352	6	0.000
Linear-by-linear association	101.547	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between annual income level and housing type of slum dwellers.

8.2.1.6 Hypothesis-6

H_0: There is no association between annual income level and distance from the main road of slum dwellers.

H_1: There is an association between annual income level and distance from the main road of slum dwellers.

Table 23: Crosstabulation between annual income level and distance from the main road

Crosstabulation between annual income level and distance from the main road							
			Distance from the main road				Total
			Very near	Near	Far	Very far	
Annual income level	Very low income	Number	0	0	12	12	24
		% of Total	0.00%	0.00%	10.00%	10.00%	20.00%

	Low income	Number	0	0	36	12	48
		% of Total	0.00%	0.00%	30.00%	10.00%	40.00%
	Moderate income	Number	0	12	0	0	12
		% of Total	0.00%	10.00%	0.00%	0.00%	10.00%
	Middle income	Number	36	0	0	0	36
		% of Total	30.00%	0.00%	0.00%	0.00%	30.00%
Total		Number	36	12	48	24	120
		% of Total	30.00%	10.00%	40.00%	20.00%	100.00%

Source: Compiled by researcher

Table 24: Chi-square test results for association between variables

Chi-square tests			
	Value	**df**	**Asymptotic significance (2-sided)**
Pearson chi-square	247.500	9	0.000
Likelihood ratio	219.91	9	0.000
Linear-by-linear association	100.722	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between annual income level and distance from the main road of slum dwellers.

8.2.1.7 Hypothesis-7

H_0: There is no association between distance from the main road and the housing type of slum dwellers.

H_1: There is an association between distance from the main road and the housing type of slum dwellers.

Table 25: Crosstabulation between housing type and distance from the main road

Crosstabulation between housing type and distance from the main road							
			Distance from the main road				**Total**
			Very near	**Near**	**Far**	**Very far**	
Housing type	Pucca	Number	36	0	0	0	36
		% of Total	30.00%	0.00%	0.00%	0.00%	30.00%
	Semi-pucca	Number	0	12	36	0	48
		% of Total	0.00%	10.00%	30.00%	0.00%	40.00%
	Kutcha	Number	0	0	12	24	36
		% of Total	0.00%	0.00%	10.00%	20.00%	30.00%
Total		Number	36	12	48	24	120
		% of Total	30.00%	10.00%	40.00%	20.00%	100.00%

Source: Compiled by researcher

Table 26

Chi-square tests			
	Value	**df**	**Asymptotic significance (2-sided)**
Pearson chi-square	187.500	6	0.000
Likelihood ratio	207.352	6	0.000
Linear-by-linear association	101.547	1	0.000
No of valid cases	120		

Source: Compiled by researcher

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between distance from the main road and the housing type of slum dwellers.

9. Findings of the study

Based on the analysis and discussion presented in this study, the key findings are as follows:

9.1 Demographic characteristics

- 80% of the surveyed households communicate in Nepali.
- 70% identify as Hindu.
- 30% each belong to the Unreserved and Scheduled Caste categories.
- 30% have completed high school education.

9.2 Socioeconomic profile

- 30% each are engaged in small businesses and the government service.
- 40% fall in the low-income group (Rs. 50,001-100,000 annual income).
- 60% have family sizes of 4-6 members.
- 40% live in semi-pucca houses.
- 50% reside in areas with very steep slopes.
- 40% live far (300-500 meters) from the main road.
- 50% have waste collected by municipal vehicles.
- 70% obtain drinking water from municipal taps.

9.3 Statistical associations

Significant associations were found between the following variables:

- Annual income level and occupation.
- Annual income level and education.
- Education and occupation.
- Annual income level and family size.
- Annual income level and housing type.
- Annual income level and distance from the main road.
- Distance from main road and housing type.

The study reveals socioeconomic vulnerabilities among slum dwellers in Darjeeling, including low incomes, limited education, and inadequate housing and infrastructure.

There are clear links between income levels, education, occupation, and living conditions, indicating the interconnected nature of socioeconomic factors in slum areas.

The findings highlight the need for targeted interventions to improve education, employment opportunities, housing, and basic services in Darjeeling's urban slums.

10. Conclusion

This study examines the living conditions of people living in urban slums in Darjeeling Town. It identifies many challenges and areas that require improvement. This study shows how different factors affect the lives of slum residents, such as language, religion, caste, education, jobs, income, family size, housing, and access to basic services. Most slum households speak Nepali (80%) and Hindi (70%), matching the demographics of the area. The study finds a variety of jobs, with 30% being small businesses and services. However, 40% of the people earn low incomes (Rs. 50,001-100,000 annually), showing economic struggles. Education levels differed, with 30% finishing high school, suggesting room for improvement. Most homes are semi-pucca (40%), and many people live on steep slopes (50%) and far from main roads (40% live 300-500 meters away). These conditions render slum residents vulnerable to environmental risks and limit their access to city services. The study found links between income, education, jobs, family size, housing, and distance from roads. These connections demonstrate the complex nature of urban poverty and the need for comprehensive solutions. The findings match other research on urban slums, which highlights issues such as spatial segregation, economic instability, and poor housing that affect health and well-being. The challenges in Darjeeling's slums are similar to those in other areas, such as the limited access to essential services and health risks. Targeted actions are required to address these issues. These could include better education and skill programs to improve job prospects and income, upgrading housing and infrastructure to reduce risks from steep slopes, improving access to basic services, such as water and sanitation for better health, policies to support economic growth and reduce income gaps, and community programs to build social ties and collective action for slum improvement. In conclusion, this study highlights the urgent need for comprehensive urban planning and development strategies that focus on the needs of slum communities in Darjeeling Town. By addressing the interconnected socio-economic factors found in this research, policymakers and urban planners can work towards creating more inclusive, resilient, and sustainable urban environments that improve the quality of life for all residents, including those in slum areas.

References

1. Ahsan KZ, Khan SH, Chakraborty N, Arifeen SE, Al-Mamun MA. Effects of individual, household, and community characteristics on child nutritional status in slums of urban Bangladesh. Arch Public Health. 2017;75(1). DOI:10.1186/s13690-017-0176-x.
2. Bird J, Montebruno P, Regan T. Life in a slum: understanding living conditions in Nairobi's slums across time and space. Oxf Rev Econ Policy. 2017;33(3):496-520. DOI:10.1093/oxrep/grx036.
3. Bonela G, Arjun P, Kumar CS. A study on socio-economic and domestic consumption analysis in urban poor (with reference to urban slums, Visakhapatnam City, Andhra Pradesh). Int J Creat Res Thoughts. 2018;918-921.
4. Chhetri B. Proliferation of slums in Kalimpong town of Darjeeling Himalaya: a study of socio-economic and housing conditions. Ensemble. 2020;2(1):52-68. DOI:10.37948/ensemble-2020-0201-a006.
5. Corburn J, Sverdlik A. Informal settlements and human health. In: Frumkin H, editor. Environmental health: from global to local. Cham: Springer; c2018, p. 155-71. DOI:10.1007/978-3-319-74983-9_9.
6. Farooq M, Singh SK, Mushtaq F, Singh D, Kumar P, Gupta A, *et al*. Strategic slum upgrading and redevelopment action plan for Jammu City. Resources. 2022;11(12):120. DOI:10.3390/resources11120120.
7. Khan S, Kumari R, Malaviya P, Singh A, Rathore D. Socio-economic and environmental vulnerability of urban slums: a case study of slums at Jammu (India). Environ Sci Pollut Res Int. 2023;31(12):18074-18099. DOI:10.1007/s11356-023-30630-5.
8. Mondal J. Socio-economic status of tribal people Mukundapur Village, West Bengal. Int J Innov Sci Res Technol. 2018;3(12):354-7.
9. Ooi GL, Phua KH. Urbanization and slum formation. J Urban Health. 2007;84 Suppl 1:27-34. DOI:10.1007/s11524-007-9167-5.
10. Rai PC. Economic development and urbanization in Darjeeling Hills: a historical perspective. J Emerg Technol Innov Res. 2018;5(12):918-926.
11. Rai PC. An empirical study on the socio-economic conditions of the plantation workers in the tea industry of Darjeeling. Int J Appl Sci Eng. 2019;7(1):83-93.
12. Razzaque A, Islam MZ, Chin B, Mia MN, Kuhn R, Chowdhury R, *et al*. Association of time since migration from rural to urban slums and maternal and child outcomes: Dhaka (North and South) and Gazipur City Corporations. J Urban Health. 2019;97(1):158-170. DOI:10.1007/s11524-019-00395-9.
13. Saikia DD, Khanikor U, Dutta A. Socio-economic status of rural Assam: an income level analysis. Int J Mech Eng. 2022;7:203-208.
14. Sharma G. Socio-economic condition of the people of Darjeeling: out-migration as a survival strategy (?). Int J Innov Res Dev. 2014;3(5):6-18.
15. Srikumar H, Babu A. A socio-economic review of the tribes in Kerala. IOSR J Econ Finance. 2023;14(2):1-6. DOI:10.9790/5933-1402020106.
16. Suthar N, Das D, Mallik J. Land-use suitability assessment for urban development using multi-criteria decision-making analysis in the Himalayan districts of Shimla, Nainital, and Darjeeling, India. Discov Environ. 2024;2(1). DOI:10.1007/s44274-024-00134-1.