

PROLIFERATION OF SLUMS IN KALIMPONG TOWN OF DARJEELING HIMALAYA: A STUDY OF SOCIO-ECONOMIC AND HOUSING CONDITIONS

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Abstract:

One of the major problems of rapid urbanization is the formation and proliferation of slums; the slums were once the characteristics of large cities have started emerging in small and medium-sized towns and urban centers too. Kalimpong town, which is a medium-sized town located in Darjeeling Himalaya has the highest number of slum pockets among the urban centers located at the Darjeeling Himalaya. The slums house the economically vulnerable and weaker sections of the society and are deemed to be poor. A thorough socio-economic survey by the questionnaire method was conducted in the selected slum pockets of Kalimpong town and was statistically analyzed.

1.0. Introduction

Slums are present in almost all the urban areas of the world, and 32 percent of urban population amounting to 1 billion people live in them, and this figure has been projected to reach the 2 billion mark by the year 2030 (Global Report on Human Settlements, 2001). The problem of slum proliferation is more in developing nations than in the developed realm. The report shows that about 50 percent of the Slum dwellers are found in South-Central and Eastern Asia, 14 percent in Latin America, and 17 percent in Sub-Saharan Africa (Global Report on Human Settlements, 2001). According to N.S.S.O. Report (2002), every seventh person in urban India is a slum dweller.

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There is no universal definition of a slum. Some writers have often regarded slum as a special type of disorganized area. Anderson (1959) has described slums as “areas of the city where housing is substandard, deteriorated and degenerated”. According to Guider, “the Slum is an environment that lacks the basic amenities of good living conditions and is regarded as the worst form of human habitation”. Bergel (1965) states, “Slums may be characterized as areas of substandard housing condition within a city.”

The UNESCO definition says that “a slum is a building, group of building or area characterized by overcrowding, deterioration, unsanitary conditions or absence of facilities or amenities which because of these conditions or any of them, endanger the health, safety or morals of its inhabitants or the community”.

The USA Housing Act of 1949 and Slum Area Improvement and Clearance Act, 1956 by Government of India defines a slum as, “any predominantly residential area where the dwellings, which by any reason of dilapidation, overcrowding, faulty arrangement of design, lack ventilation, light or sanitary facilities or any combination of these factors which are detrimental to safety, health or morals”.

However, all the aforesaid definitions have their limitations in that sense that they do not help the readers to ascertain whether an area is a slum or not. The United Nations Expert Group Meeting was held in Nairobi from 28th to 30th October 2002 and adopted an operational definition of the slum (Global Report on Human Settlements, 2003). It defines slum, “as an area that combines, to various extents, the following characteristics (restricted to the physical and legal characteristics of the settlements, and excluding the more difficult social dimensions):

- Inadequate access to safe water;
- Inadequate access to sanitation and other infrastructure;
- Poor structural quality of housing;
- Overcrowding;
- Insecure residential status.”

2.0. Literature Review

There are ample pieces of literature available that focuses on the issues of urbanization and slums. These studies have focussed on the different aspects of proliferation and problems related to slums and slum dwellers, and they have resulted in different opinions and viewpoints regarding the same.

The earliest known study on slums was done by Frederick Engels in the year 1844. In his study of slums of England, he highlighted the fact that the slums had and have existed in the worst parts of the town and consisted of congested housings with three to four rooms.

Oscar Lewis(1960), in “The Culture of Poverty in Mexico: A Two Case Studies” has discussed the housing conditions, occupation, income, poverty, health, food, rent, marriage, and other social factors of the slum dwellers in Mexico City. He found out that all slum dwellers had some inherent distinctive qualities amongst themselves, which were marked by lack of savings, high rates of illegitimacy, disorganized family structure, sense of marginality, and others.

Nels Anderson (1960) discussed the formation of slums in Birmingham, England, during the industrial revolution period and has stated that the accelerated rural to urban migration within the two centuries led to the emergence of different problems related to urban growth.

S.N. Sen (1969) discussed the housing conditions and municipal services of the slum pockets of Calcutta. He highlighted that the housing of the poor was constructed from flimsy building materials and had only kutchha and semi-pucca house types. Moreover, the percentage of households having access to basic municipal services and facilities like drinking water and toilets were meager.

Biswaroop Das (1992) studied the slum pockets of Surat City in Gujarat. He has researched the workforce present in the 294 slum pockets in the city and found out that the slum dwellers were employed in a variety of low income generating occupations.

Chhetri and Tamang (2013) speculated how the rapid growth of the population in Darjeeling Town in Darjeeling Himalaya had led to the emergence of various problems associated with it. They have highlighted the fact that the increased population growth in the town has led to the emergence of slum housings.

Chhetri (2014) has studied the emergence of Mirik as an urban center (another town situated in Darjeeling Himalaya) and has discussed the formation of slums in a historical perspective. He has highlighted how a newly emerging and expanding urban center happens to engulf the pre-existing villages, which later gets categorized as slum pockets.

The above-mentioned works have not only mainly focussed on the relationship between urbanization and migration on the proliferation of slum pockets but have also focussed on socio-economic attributes of the slum dwellers in the different urban centers of the world. However, these studies have not attempted to examine the effect of the physiographical features like the degree of slope and the accessibility of the locality on the housing conditions of the slum dwellers. This study is first of its kind which has been attempted on the Kalimpong town with a focus on *historical originem* of Kalimpong town and the study of socio-economic and housing conditions of the slum pockets in respect not only to the socio-economic parameters but also in regard to the physiographical parameters of slope and accessibility.

The present study aims to find out the demographic, socio-economic, and housing characteristics of the slum pockets in Kalimpong town. This kind of study will help in identifying the inherent qualities and drawbacks of the slum dwellers and the slum pockets related to the socio-economic characteristics and to the physiographical characters, which will, in turn, assist in formulating policy guidelines that can not only help in ameliorating the problems of the slum pockets and slum dwellers but also in finding out paths to empower the urban poor.

3.0. Methods

The study is based on the primary data collected in two stages at the field with the help of a simple random sampling technique and stratified random sampling technique. Firstly, from the 74 slum pockets that have been identified by

the municipality of Kalimpong, only 15 pockets (21% approx. of the total) were chosen randomly during the first stage. Secondly, after careful consideration of the 15 slum pockets in terms of their spatial location and the demographic attributes which were obtained from the municipality records, 7 slum pockets (i.e., 9% of the total) were selected during the second phase. These were selected to ensure that the slums pockets located at the different parts of the town were included in the study and to exhibit diversity not only in terms of demographic attributes but also in terms of physical features such as accessibility and terrain of the area.

The survey was conducted in the slum pockets on the basis of a questionnaire, and the number of households covered in the survey was in proportionate to the size of the slum pockets i.e., larger the number of households that the slum pocket had, more the number of households were covered by the survey (5% of the total slum households were surveyed).

The collected data has been analyzed by using the Chi-Square test technique in SPSS 21, and Arc-GIS 10.2 has been used for preparing maps. Chi-Square test is feasible for the present study as it incorporates a small sample size.

The Chi-Square (χ^2) test is one of the useful measures for comparing the expected or theoretical frequencies of distribution with the observed or actual frequencies to determine whether there is a difference between what is expected and what was observed (Black, 2010). Thus, this is a measure of the actual divergence of the observed from the expected frequencies. Chi-Square is very important in sampling studies where divergence between the expected (theory) and the actual (fact) is to be studied.

Chi-Square (χ^2) has been calculated by using the following formula:

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Equation (1)

Where, O = Observed Number of cases,
E = Expected Number of Cases.

4.0. Introduction to the study area

The Darjeeling Himalaya, which is a section of the Eastern Himalaya in India, consists of the lower portion of the outlying hills of the Lower Himalayas and a stretch of the marshy tract known as Terai. The Darjeeling Himalaya falls under the administrative jurisdiction of Darjeeling district and Kalimpong district of the state of West Bengal, India. Kalimpong town is the district head-quarter of the Kalimpong District and falls under the Gorkhaland Territorial Administration (G.T.A.), an autonomous body formed to grant more administrative autonomy to the people of Darjeeling Hill Area (previously similar body called D.G.H.C. had been formed in 1988 after the signing of peace accord which had been preceded by violent agitation for the creation of the state of Gorkhaland within the Union of India).

The early recorded history of Kalimpong is short, and it is recorded only after the Anglo-Bhutan war of 1864, even the very origin of its name is not very clear, Kalimpong is said to have been distorted from the Lepcha word "Kalimpung" which means "Hillock of Assemblage" (Tamsang, 1998); others opine it means "Ridges where we play" (Tamsang, 1998). The Tibetan translation of the word

Kalimpong is “The Stockade of King’s Ministers” (Malley, 1907) from the two Tibetan words “Kalon” meaning King’s Ministers and “Pong” meaning Stockade. Nepalese call Kalimpong as “Kalibong” (Bernier, 1997), which means the black spurs.

The District of Kalimpong and the Duars region were once the part of the Kingdom of Bhutan (which it had annexed from Sikkim). In 1862 news reached the British that the Bhutanese forces were making hostile preparation to attack Darjeeling, and troops were subsequently despatched to safeguard the borders of the British Territories; this was followed by the special mission under Sir Ashley Eden to Bhutan for reconciliation and restoration of plundered properties in 1863. The British envoy was insulted by the Bhutanese government and was forced to sign a treaty by which the British Government in India had to renounce the Bhutan Duars at Assam frontier. In order to soothe the hurt pride, a military force of a sufficient strength was despatched in 1864, and the whole of the Kalimpong area and Bhutan Duars was annexed to British India by the Treaty of Sinchula in 1865 (Malley, 1907). This area became a subdivision within the Darjeeling District and remained so until 2017 when it was upgraded to a District.

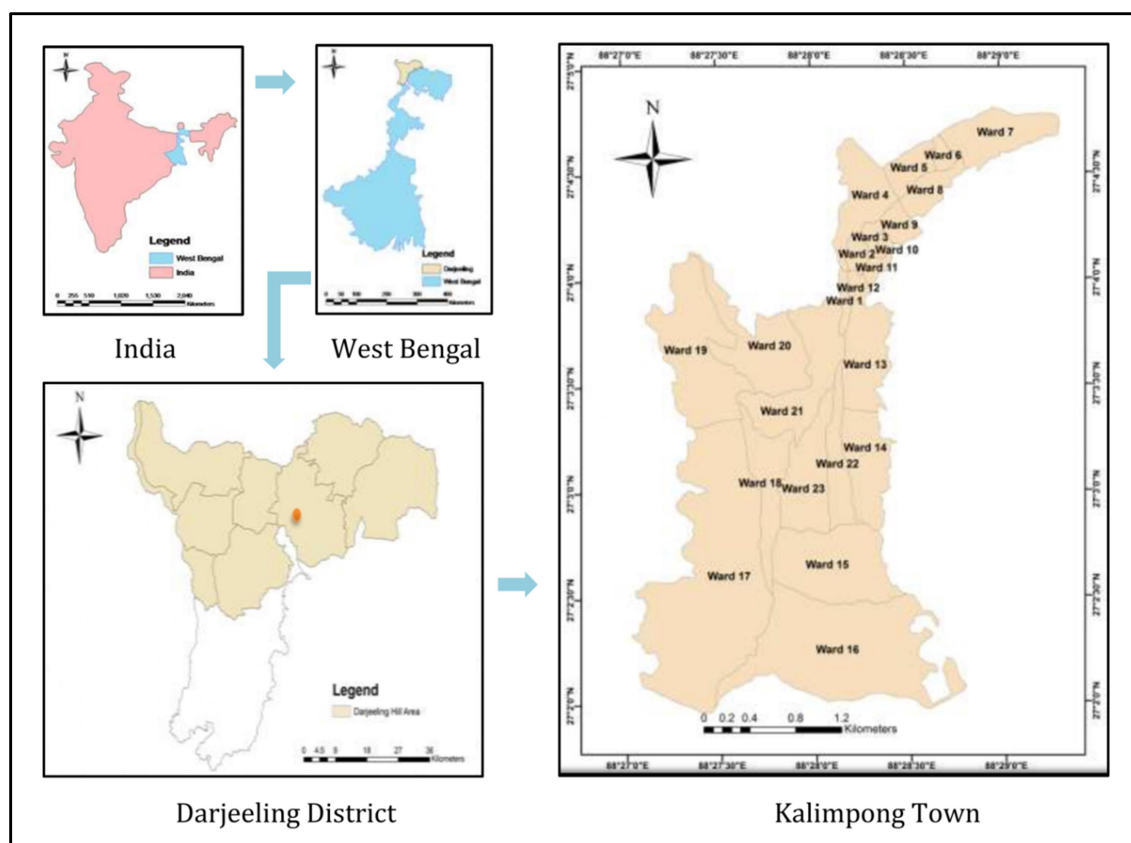


Fig. 1
Location of the Study Area

The present town of Kalimpong first started as a village, a small rural market center had been established and just above the market center the most prominent landmark, a Gothic church (Macfarlane church) had been built, and the surrounding slopes were all dotted by buildings of the Guild Mission (Mission of

the Church of Scotland). The first prominent buildings to come up in this newly acquired area were Macfarlane church with its guild buildings which included Charitable Hospital, Medical Mission House, Ladies' Mission House, Training and Boys' School and Hostel, The Scottish Universities Mission, the Tibetan Mission, and the St. Andrew's Colonial Homes in the ridgeline just below the slopes of Deolo and Coronation Dispensary, Victoria Memorial, a Buddhist Monastery, Hindu Temple and Mohamaden Mosque in the lower slopes where Market Center had been established (Mallay, 1907).

Kalimpong, from the very beginning, gained immense importance as the commercial center for the Tibetan trade and also as the agricultural market center for the surrounding villages. Consequently, it experienced rapid population growth due to the migration of the people from the surrounding areas of Nepal, Sikkim, and Bhutan and as well as from the plains of India. Its Population had reached 1069 persons by 1901 (Malley, 1907).

The Municipality of Kalimpong was established on 10th July 1945 (Dash, 1947), comprising of 10 municipal wards. The total area covered by the Municipality is 8.68 km² and comprises of 23 wards with 46128 persons. Kalimpong town is developed as a commercial center for the trade between India and Tibet and as the center for agricultural products. It can be divided into three distinct parts.

- The Mission compound and the St. Andrews Homes area on the lower slopes of Deolo to the Rishi Road, which is characterised by well constructed buildings and wooded hill sides.
- The market area, which is the closely built up area on a narrow strip of land on the side of Rishi Road.
- The slopes of the hill culminating at Durbin Dara (Observatory Hill), also known as the Development area, as it has been developed as the residential area by the Government where better class buildings can be found.

The Central Business District of Kalimpong is the Bazaar area (market area), where the financial institutions and administrative centers are located. Many areas of Kalimpong town are devoted to small scale industries and floriculture.

5.0. Population Growth in the town

The erstwhile Kalimpong subdivision (now a new district) which was a part of the Darjeeling District, in general, has experienced population growth after the area was taken over by the British; the Britishers favored agriculture in the region and encouraged migration of the people from the neighbouring areas for the same; but particularly if the population growth in the Kalimpong

Table 1

Population Growth in Kalimpong Town

Year	Total Population	Growth Rate
1931	8776	
1941	11958	+36.25
1951	16677	+39.46
1961	25105	+50.53
1971	23430	-6.67
1981	28885	+23.28
1991	38832	+34.43
2001	42998	+10.73
2011	46128	+7.28

Source: Kalimpong Municipality records, 2011

town is to be considered, the town had experienced rapid population growth owing to the Indo-Tibet trade through Jeleppla.

The trend of population growth in Kalimpong town can be divided into two phases, i.e., Phase of Rapid Population growth (1931-61) and Phase of Moderate Population growth (1971 onwards), the Indo-China war being the year of population divide. During the first phase (1931-61), Kalimpong town experienced rapid population growth on an average of 42 percent, the period during 1951-61 being the decade of the highest population growth, with 50.53 percent increase in its population. Kalimpong town during that period was a vibrant, bustling, cosmopolitan commercial center, with people from all around the world residing there, owing to the flourishing Tibet trade through Jeleppla (Datta-Ray, 2013). The Indo-China war closed the Jeleppla trade (Jeleppla is the high pass at an altitude of 4267 meters and situated on the Sikkim-Tibet border. It was opened in 1893 for trade (Wangchuk, 2013) and one of its routes passed through Kalimpong town). Its closure following the Indo-Sino war led to the abrupt decline in the population growth in Kalimpong town during 1971 (Table 1). Since the post-war period, the population of Kalimpong town is growing moderately with 18.93 percent. Since the closure of the Tibet trade, Kalimpong town has lost its prominence has somewhat become stagnant as compared to Darjeeling and Siliguri.

6.0. Slum pockets in the Town

Urbanization in the town has taken place mostly in a haphazard manner and is unplanned. Kalimpong town over the years has been suffering from over congestion, traffic problems, the formation of slums, etc. Out of the 23 wards in the town, the Municipality of Kalimpong town has identified slum pockets in 22 wards with a total slum population of 8047 persons. There are two different reasons for the formation of slums in the town.

- The thriving Tibet trade through Jeleppla had attracted a large number of immigrants to the town and many of these had settled in and around the low-cost housing near the C.B.D. area and around the periphery of the town.
- The expansion of the Town, which led to the reorganisation of the limits of the Municipality, happened to engulf many surrounding villages (Bustees), which later on were designated as slums.

The Municipality of Kalimpong has identified 74 slum pockets (Fig. 2) spread over all wards except ward no 11 of the town with 13495 slum households with 11210 slum dwellers. Ward numbers 15, 18, and 19 have the highest number of slum pockets, and ward number 23 has the largest number of slum dwellers (Table 2).

Seven slum pockets, namely Baghdhara, Thakurbari, Murgihatta, Shantinagar, Chalisay, Dumshipakha, and Naspatidara, have been selected for the study with a sample size of 140 households to determine the socio-economic profile of the slum dwellers of Kalimpong town. Income and Occupation, number of Family members, Caste groups, Religion, Literacy status, and Language composition have been chosen to determine the socio-economic conditions of the slum dwellers.

Table 2
Slum pockets and the number of slum dwellers in different wards

Sl. No.	Ward No.	Number of Slum Pockets	Number of House holds	% of slum house holds
1	1	2	70	21.74
2	2	2	65	20.19
3	3	2	77	23.91
4	4	3	156	48.45
5	5	3	85	26.39
6	6	4	148	45.96
7	7	4	69	21.43
8	8	3	80	24.84
9	9	2	130	40.37
10	10	2	30	9.32
11	12	1	42	13.04
12	13	3	70	21.73
13	14	4	108	33.54
14	15	6	305	94.72
15	16	5	188	58.38
16	17	3	135	41.93
17	18	6	83	25.77
18	19	6	296	91.93
19	20	4	102	31.68
20	21	3	93	28.88
21	22	2	37	11.49
22	23	4	322	78.53

Source: Kalimpong Municipality, 2011

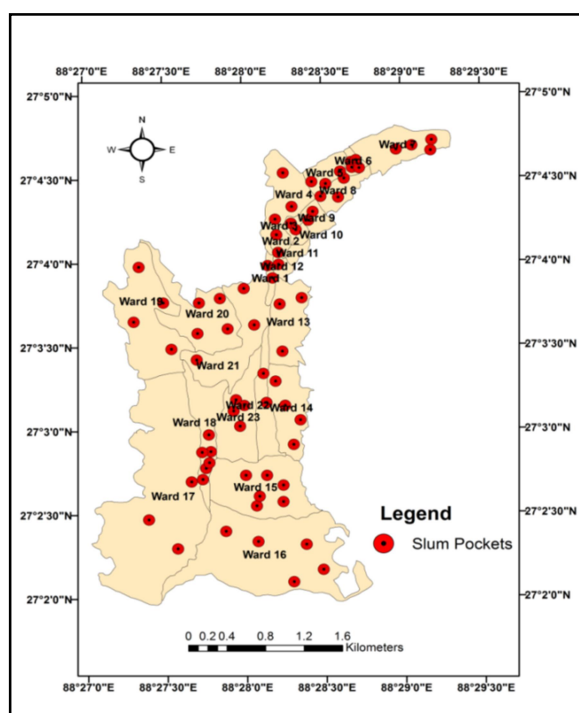


Fig. 2
Location of the Slum Pockets in Kalimpong Town 2011

7.0. Socio-economic conditions of the slum dwellers

7.1. Occupation and Income

The employment status and income levels are the two factors that determine the economic conditions of the households. Four categories of income groups have been identified for the slum households of Kalimpong town i.e.

- Upto Rs. 50000 (Very Low Income)
- Rs. 50001 – Rs. 100000 (Low Income)
- Rs. 100001 – Rs. 150000 (Moderately low Income)
- Above Rs. 150000 (Middle Income)

The slum households in Kalimpong town are characterized by low income. Field data shows that about 37 percent of the slum dwellers in the town are into the middle-income group with an annual household income of more than Rs 1,50,000. Contrastingly, about 39 percent of the total slum dwellers have an annual income of less than 100000 (Table 3). The low-income level in the slum households is attributed to their

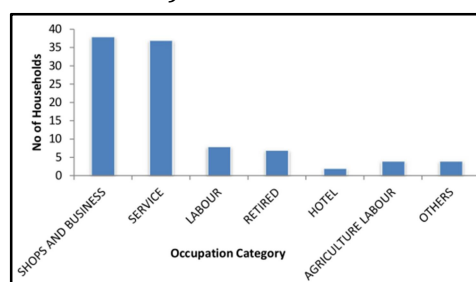


Fig. 3
Occupational categories (Source: The author)

employment in low paying semi and unskilled sectors like owners of small grocery shops, the shop helps, manual and agricultural labourers, hotels staff, and peons in different Government offices (Fig. 3).

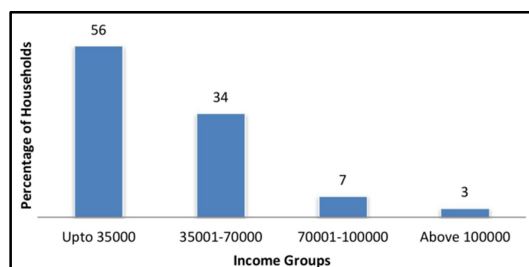


Fig. 4
Per Capita Income (Source: The author)

Table 3
Income of the Slum Households in the slum pockets of Kalimpong Town

Income	% of Households
Very Low Income	8
Low Income	31
Moderately low Income	24
Middle Income	37
Total	100

Source: Field Survey by the author, 2018

The annual per capita income among the slum dwellers is extremely low, almost 56 percent of the total slum households have per capita annual income of less than Rs 35000, 34 percent of the households have per capita income between Rs 35000 to Rs 70000, and only 3 percent of the households have per capita income of more than Rs. 100000 (Fig. 4).

7.2. Family Size

The family size in the slum pockets of Kalimpong town has-been classified into three groups (Table 4). Eleven percent of the households have family size of 7 and above, and 20 percent of the household has a family size up to 3 members; the average family size in the slum pockets of Kalimpong town is of 4 to 6 members.

When the Income is compared with the family size, it can be seen that Lower-income groups tend to have a small family size, and the number of family members tends to increase with the income. Since the χ^2 value is 15.622 at 8 d.f. (Degrees of Freedom) with P-value = 0.047 (two-tailed); the null hypothesis is rejected, and it can be concluded that the family size is dependent on the income level.

Table 4
Family Size and Income

Income group	Family size			Total
	Up to 3	4 to 6	7 and Above	
Very Low Income	5 (50.0) 1.9	4 (40.0) 7.0	1 (10.0) 1.1	10 (100.0) 10
Low Income	8 (19.1) 7.8	30 (71.4) 29.4	4 (9.5) 4.8	42 (100.0) 42
Moderately low Income	9 (26.5) 6.3	20 (58.8) 23.8	5 (14.7) 3.9	34 (100.0) 34
Middle Income	4 (7.4) 10	44 (81.5) 37.8	6 (11.1) 6.2	54 (100.0) 54
Total	26 (18.6)	98 (70.0)	16 (11.4)	140 (100.0)

$\chi^2 = 15.622$, d.f= 8, P = 0.047

Source: Field Survey by the author, 2018

7.3. Caste

The caste composition in the slum pockets in Kalimpong town is very diverse. All the caste groups in varying proportions have settled in the various slum pockets, but surprisingly people belonging to the general category and schedule caste category seem to predominate (Table 5).

Table 5
Caste Composition in the slum pockets of Kalimpong Town

Caste	General	S.C.	S.T	OBC-B	OBC-A	Total
Frequency	40	38	22	27	13	140
%	28.6	27.1	15.7	19.3	9.3	100

Source: Field Survey by the author, 2018

Table 6
Income and Caste

Caste	Income					Total
		Very Low	Low	Moderately Low	Middle	
General	O	2(5)	16(40)	9(22.5)	13(32.5)	40(100)
	E	2.8	12.1	9.7	15.4	
S.C	O	3(7.9)	7(18.4)	13(34.2)	15(39.5)	38(100)
	E	2.7	11.4	9.2	14.7	
S.T	O	1(4.5)	6(27.3)	8(36.4)	7(31.8)	22(100)
	E	1.5	6.5	5.2	8.8	
OBC	O	4(10)	13(32.5)	4(10)	19(47.5)	40(100)
	E	2.9	12	9.7	15.4	
Total		10(7.2)	42(30)	34(24.3)	54(38.5)	140(100)

$\chi^2 = 18.65$, d.f. = 16, $P = 0.287$

Source: Field Survey by the author, 2018

When the caste group and income level were compared, it was found that the persons' caste did not have any relation to the persons' income (Table 6). The two parameters did not have any significant relationship and are independent to each other. The calculated χ^2 was 18.65 at 16 d.f. with the P-value of 0.287 (two-tailed), and hence the null hypothesis has been accepted. It means that the individual's position on the social ladder does not have any impact on his/her economic status, and all the caste groups living in the different slum pockets have similar income levels.

7.4. Religion

Most of the slum dwellers are Hindus by faith; the other faiths like Christians, Buddhists, and Muslims are also present but relatively in very low proportions (Figure 5). This shows that the ghettoizing of the people in the slums do not take place along religious lines.

7.5. Literacy status

The literacy rate in the slum pockets of Kalimpong Town is high, i.e., 77.6 percent, and surprisingly the percentage of female literates

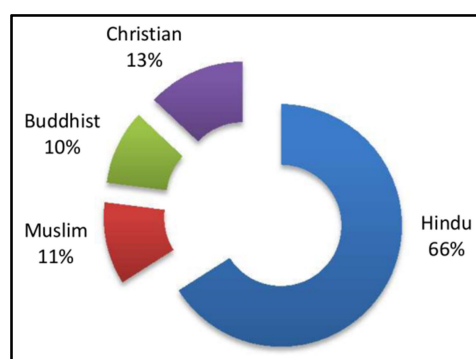


Fig. 5
Religious Composition (Source: Field Survey by the author, 2018)

(51.8 percent) is higher than the percentage of male literates (48.2 percent). This is due to the fact that in the hill areas, women and men are given equal treatment. The education level of the slum dwellers reveals a different picture, where the majority of the population (46.98 percent) have obtained education only up to primary level, 25.86 percent of the people have received education upto higher secondary level, 20.25 percent of the people are graduates and only 6.89 percent have done post-graduate studies (Fig. 6).

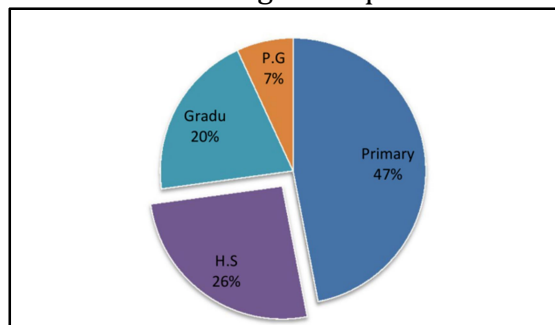


Fig. 6
Educational level (Source: Field Survey by the author, 2018)

7.6. Language Composition

Nepali is the most spoken language in the slum pockets in Kalimpong town; almost 90 percent of the people are Nepali speaking population, 8.5 percent have Hindi as mother tongue, and 1.6 percent speak Bengali. Those slum pockets which have been developed due to migration of the people from the plain areas have the majority of Hindi and Bengali speakers whereas those areas which were the preexisting villages but were later included in the Municipal Area speak Nepali and are mono-ethnic neighbourhoods.

7.7. Housing Conditions

The different kinds of houses which are found in slum pockets of Kalimpong town have been classified into two categories i.e., Pucca, Semi-Pucca and Kutcha; where, a pucca house is one which is constructed with cement and concrete roofing (R.C.C.), Semi- Pucca denotes a house having walls made of up bricks and cement but with a tin roofing and a kutch house is one that is made of either wood, bamboo and mud or a tin sheet with tin roofing. 33.6 percent of the houses are pucca house in nature, with semi-pucca house types comprising 38.6 percent and 27.9 percent are the kutcha type of the total surveyed households. The semi-pucca houses are predominant across all the income levels (Table 7). The calculated $\chi^2 = 12.026$ at 8 d.f. with P-value = 0.150 (two-tailed) null hypothesis is accepted, house type and income levels are independent. The nature of the house does not depend on the income levels of the slum dwellers. Instead, there are other factors like the slope of the area and the distance from the main road that affects the housing conditions of the slum dwellers (Table 8 and Table 9). The surveyed slum pockets of the town have been generally developed over three categories of the slope, i.e., gentle with a gradient of 1:10, steep with 1:5 and very steep with a gradient of 1:3. It is due to the fact that the location of the house on the steep gradient and away from the main road will incur additional costs on the house owner in the guise of additional carrying charges and additional labour charges. This additional cost will hinder his freedom to choose bulky raw materials and will compel him to use light and readily available raw materials during the construction process.

Table 7
House Type in the slum pockets of Kalimpong Town

Income (in Rs)	House Type			Total
	Pucca	Kutcha	Semi- Pucca	
Very Low Income	1(1.0)	3(3.0)	6(6.0)	10(7.1)
Low Income	11(26.2)	16(38.1)	15(35.7)	42(30)
Moderately low Income	11(32.4)	8 (23.5)	15 (44.1)	34(100)
Middle Income	24(44.4)	12(22.3)	18(33.3)	54(100)
Total	47(33.6)	39(27.9)	54(38.5)	140(100)

$\chi^2 = 12.026$, d.f. = 8, P = 0.150

Source: Field Survey by the author, 2018

Table 8
Slope and House Type in the slum pockets of Kalimpong Town

Slope	House Type			Total
	Pucca	Kutcha	Semi- Pucca	
Very Steep	23(30.3)	20(26.3)	33(43.4)	76(100)
Steep	13(72.2)	4((22.2)	1(5.6)	18(100)
Gentle	11(23.9)	15(32.6)	20(43.5)	46(100)
Total	47(33.6)	39(27.9)	54(38.5)	140(100)

$\chi^2 = 16.016$, d.f. = 4, P = 0.003

Source: Field Survey by the author, 2018

When the nature of the house and the slope of the area are compared, the calculated χ^2 value was 16.016 at 4 degrees of freedom with P-value of 0.003 (two-tailed); hence null hypothesis has been rejected, and the alternative hypothesis will be accepted. The nature of the house depends upon the slope of the area.

The slum pockets in respect to the distance from the main road have been categorized into four categories:

- Very near (< 100 meters)
- Near (100-300 meters)
- Far (300-500 meters)
- Very Far (> 500 meters)

Table 9
Distance from the main road and House Type in the slum pockets of Kalimpong Town

Distance from the main road	House Type			Total
	Pucca	Kutcha	Semi- Pucca	
Very near	19(47.5)	15(37.5)	6(15.0)	40(100)
Near	16(80.0)	4(20.0)	0(0.0)	20(100)
Far	12(20.0)	14(23.3)	34(56.7)	60(100)
Very Far	0(0.0)	6(30.0)	14(70.0)	20(100)
Total	47(33.6)	39(27.9)	54(38.5)	140(100)

$\chi^2 = 51.103$, d.f. = 6, P = 0.000

Source: Field Survey by the author, 2018

When the nature of the house and the distance from the main road are compared, the calculated χ^2 value was 51.103 at 6 degrees of freedom with a P-value of <0.001 (two-tailed); hence the null hypothesis has been rejected, and the alternative hypothesis will be accepted. The nature of the house depends upon its location in respect to the main road in the hill town of Kalimpong. It is surprising to see that 12.9 percent of the slum households do not have a kitchen in the house. They usually use one room for cooking as well as for other purposes like sleeping. 51.4 percent have separate kitchens, and 35.7 percent of the households have attached kitchens at their homes. Regarding the condition of the kitchens, 83.6 percent are pucca, and 3.6 percent are kutcha in nature. The separate kutcha

kitchen, which is typically found in the slum pockets of Kalimpong town, is made either of wood, mud, or tin sheet with mud floor (Plate 1). Almost 81 percent of the slum households have privately owned toilets, and the rest 19 percent go to public latrines. The toilet type commonly found has been categorized as pucca, kutcha, and semi pucca. 32.5 percent of the households have the pucca toilets, 64 percent have kutcha toilets, and 3.5 percent of the households have semi-pucca toilets (Fig. 7).

It has been found out that 54.3 percent of the households are located on very steep slopes, 12.9 percent on the steep slopes, and 32.8 percent on the gentle slopes (Table 10). The hilly areas due to its physiography have very limited availability of suitable lands for built-up purpose so people are forced to occupy whatever vacant land is present because of which most of the slum households have developed their houses in the very steep slopes of the town. 86.4 percent of the houses in the surveyed slum pockets are single-storied dwelling units, and multi-storied buildings are rarely found. When the number of stories was compared with the income levels and the slope of the land (Table 11), it was found that the income level did not have any significant relationship with the number of stories ($\chi^2 = 15.241$, d.f. 12, P-value = 0.229 (two-tailed), the null hypothesis being accepted}. On the other hand, the slope of the land seems to have a significant relationship with the number of stories (Table 11). The $\chi^2 = 14.837$ at 6 d.f. with P-value = 0.091 (two-tailed), the null hypothesis is rejected, and the alternative hypothesis is accepted; there is an association of the slope with the number of stories. As mentioned in the above discussion, the slum households have low-income levels, and the majority of them have occupied steep slopes; it incurs an extra cost to build multi-storied houses even if those are constructed with available local materials like wood and bamboo.

Seventy-four percent of the households have constructed houses with bricks and

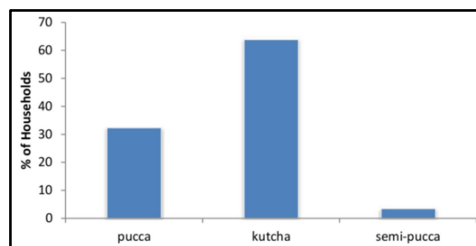


Fig. 7
Toilets by type (Source: Field Survey by the author, 2018)



Plate 1
A kutcha kitchen (Source: The author)

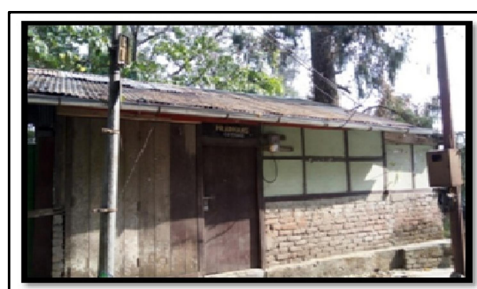


Plate 2
House built of mixed medium (wood and bricks with mud) (Source: The author)



Plate 3
House built of mixed medium (wood and mud) (Source: The author)

cement, fifteen percent with wood and two percent with mud, and the rest nine percent have used mixed mediums like wood and mud (Plate 2) or bricks and wood (Plate 3). Sixty-four percent of the houses have sloping roofs constructed from tin sheets, which are ideal for areas that experience heavy rainfall.

Table 10

No of Stories and Income level of the slum dwellers of Kalimpong Town

Income (in Rs)	No of Stories			Total
	1	2	3 and above	
Very Low Income	10 (100.0)	0 (0.0)	0 (0.0)	10 (100.0)
Low Income	35 (83.3)	2 (4.8)	5 (11.9)	42 (100.0)
Moderately low Income	32 (94.1)	2 (5.9)	0 (0.0)	34 (100.0)
Middle Income	44 (81.5)	9 (16.6)	1 (1.9)	54 (100.0)
Total	121 (86.4)	13 (9.3)	6 (4.3)	140 (100.0)

 $\chi^2 = 15.241$, d.f. 12, $P = 0.0229$

Source: Field Study by the author, 2018

Table 11

No of Stories and Slope of the area in the slum pockets of Kalimpong Town

Slope	No of Stories			Total
	1	2	3 and above	
Very Steep (1:3)	63 (82.9)	8 (10.5)	5 (6.6)	76 (100.0)
Steep (1:5)	13 (72.2)	5 (27.8)	0 (0.0)	18 (100.0)
Gentle (1:10)	45 (97.8)	0 (0.0)	1 (2.2)	46 (100.0)
Total	121 (86.4)	13 (9.3)	6 (4.3)	140 (100.0)

 $\chi^2 = 14.837$, d.f. 6, $P = 0.091$

Source: Field Study by the author, 2018

7.8. Waste Disposal

The disposal of the garbage depends upon the distance from the main road. Those areas which are very near to the main road dispose of their garbage in the collection vats and door to door collection by the municipality is also done along the main roads or in those localities where trucks are ply able. Since the municipality is suffering from the acute shortage of trucks and other vehicles for waste collection (Lama and Lepcha, 2011), door to door collection of the waste by municipality vehicles is rarely done in the slum pockets and in those localities which are away from the main road. So the residents of these localities tend to dispose of their garbage along the roadsides or dump them in the jhoras (small deep channels) (Table 12).

The calculated value of χ^2 is 16.079 at 6 d.f. with P -value = 0.013 (two-tailed), hence the null hypothesis is rejected, and the alternative hypothesis is accepted. There is an association between the location of the slum pockets with respect to the main road and waste disposal attitude of the residents.

Table 12

Garbage Collection in the slum pockets and their location from the main road

Distance from the main road	Collection Vat	Jhora and Road side	Municipality Van	Total
Very near	6(15.0)	34(85.0)	0(0.0)	40(100.0)
Near	7(35.0)	13(65.0)	0(0.0)	20(100.0)
Far	12(20.0)	43(71.7)	5(8.3)	60(100.0)
Very Far	0(0.0)	20 (100.0)	0(0.0)	20(100.0)
Total	25(17.8)	110(78.6)	5(3.6)	140(100.0)

 $\chi^2 = 16.079$, d.f. 6, $P = 0.013$

Source: Field Study by the author, 2018

7.9. Source of Water

The three primary sources of water for the residents of the slum areas of the hill town are Municipality taps, jhoras, and springs. The Municipality has provided water connections, but these are inadequate, and their presence tends to decrease with the increase of the distance of the houses from the main road. The slum pockets which are located at the fringes or away from the main road do not have any municipal water connections, and hence they are forced to look for alternative sources of water on their own. The Department of Public Health Engineering (P.H.E.) has also constructed few tanks to supply water in some areas, but the quantity of water supplied by the Municipality and P.H.E. is insufficient for the residents.

Jhoras and springs are the other sources of water available to the people. The residents usually channelize the water from the jhoras to their localities with the help of the PVC pipes. The water flows through these pipes with the help of gravity; a single jhora may have a multitude of pipe connections going to different localities (Plate 4). People usually fetch water from the springs in buckets and other containers, and since both springs and jhoras are rain-fed, most of them go dry during the summer season.



Plate 4
Jhora with pipe connections (Source: The author)

Most of the people are using water from two or more sources due to scarcity of water. Since many slum pockets which are located at the fringes of the town do not have municipality taps in the locality, they are forced to depend on jhoras and springs for water supply, these often dry up during the summer season, thereby increasing the hardships of the urban poor.

8.0. Conclusion

The socio-economic analysis of the slum pockets of Kalimpong town reveals that though the literacy rate of the slum dwellers is high, yet the percentage of gainfully employed is low, only 45 percent of the slum dwellers are engaged in different sectors. Since the slum dwellers are engaged in low paying jobs, their levels of income remain low, which has manifested itself in the construction of kutcha and semi-pucca houses. One of the positive aspects of the slum dwellers, which were evident from the study, is that the average family size is small, and gender biases are absent. The education of the children is given priority by all the inhabitants, and girl child is not discriminated, in fact, the slum pockets have higher female literacy rate than that of the males.

On the other hand, these slum pockets lack basic facilities like water connections, street lights, dispensaries, schools, and good roads. The Municipality

of Kalimpong town has undertaken various training program for the slum dwellers for self-employment and entrepreneurship during the last five years (2012-2017); under the aegis of Electronics Corporation of India Limited (ECIL), 600 slum dwellers were trained, 125 people received training under Sushma Mission and the Municipality in collaboration with Webel Infotech Ltd. Imparted computer education to 100 people and in collaboration with George Telegraph trained 150 people. In order to improve the skills of the womenfolk, the Municipality has so far trained 30 women in cutting and tailoring work. The Municipality has developed various slum houses under Integrated Housing and Slum Development Programme (I.H.S.D.P.), around Rs 637.88 Lakhs have been utilized for various slum housing projects in the town (Kalimpong Municipality Records, 2018).

In short, the multi-faceted approach must be undertaken to improve the quality of life of the urban poor. The empowerment of the slum dwellers through the development and enhancement of various skills by imparting workshops and training centers should be given equal importance as it's given to the improvement of the physical infrastructure of the slum pockets. Kalimpong town is very famous for its handicrafts, dairy products, noodles, and lollypops, these products have ready markets as they have very high demand in the surrounding towns and villages of the Darjeeling Himalaya, the slum dwellers can be given financial and technical assistance in these trades as well as the entrepreneurial skills can be developed so that the standard of living of the slum dwellers can be improved by making them self-dependent. These programs and policies will only be successful if the womenfolk are taken into confidence; therefore the main target group should be the womenfolk. The municipality of Kalimpong should also try to extend the basic municipal facilities to these slum pockets, electrification, collection of solid wastes, water supply and construction of roads should be given paramount importance, and the Municipal building bye-laws should be followed strictly and rigorously, as well as the functional zonation of the town should be done in general.

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