

QUALITY OF LIFE (QOL) IN URBAN SLUMS: A GEOGRAPHICAL APPRAISAL FROM PURULIA MUNICIPALITY, WEST BENGAL, INDIA

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ABSTRACT

The development of slums in the urban area is one of the major issues for the urban local bodies (ULB's). The definition of 'slum' varies from country to country. The Census of India define 'slums' as 'a compact area of at least 300 in population or about 60-70 households of poorly built, congested tenements in a unhygienic environment usually within adequate infrastructure and lacking proper sanitary and drinking water facility'. Basically, slums are the shadow zones of urban existence where poverty, crime, aesthetic population apart from other types of population, disease, and deprivation co-exist. The social problem, disparities, well being and quality of life are the new domains of geographic study in this post-modern era. This study is based on the primary survey of 690 households of different of slums located under 23 wards in Purulia city, West Bengal. This paper tries to assess the quality of life statistically in the slums of Purulia city. For determining the quality of life in the slums composite index and standard deviation have been done. To calculate the composite index 10 variables were chosen to determine the quality of life (QOL). Lastly, some suggestions were given for inclusive development and improve quality of life among the slum dwellers of Purulia city.

KEYWORDS: *Slum, Insitu Slum, Shadow, Quality of Life (QOL)*

INTRODUCTION

A slum, as defined by the United Nations agency 'UN-HABITAT', "is such an area which bears a low security as well as low infrastructure which is characterized by substandard housing." As indicated by the United Nations, "the extent of urban inhabitants living in slums diminished from 47 percent to 37 percent in the creating scene in the vicinity of 1990 and 2005. However, due to the rising urban population, the number of slum dwellers also rising. Slum population lives near about One billion in worldwide and will likely grow to 2 billion by 2030."

"Slum" was initially utilized for the most part in the expression "back slum", which means a back room. The development of slums in the urban area is one of the major issues for the Urban Local Bodies (ULB'S). Growing of the slums in the urban territory is the immediate result of the more noteworthy monetary open doors accessible in the urban communities and towns. According to Geography Dictionary, an area of poor housing, often characterized by multi-occupancy and overcrowding. Schools are poor, items sold in local shops are relatively expensive, and sanitation inadequate. Maximum Slum populations are exhibited by high concentrations of drug abusers, alcoholics, criminals, and vandals.

Britannica concise encyclopedia: density populated area of substandard housing, usually in a city, characterized by unsanitary conditions and social disorganization. Europe was joined by fast populace development and the convergence of common laborers individuals in stuffed, inadequately manufactured lodging because of Rapid industrialization in the nineteenth century. As per UN Expert Group, slum has been characterized as a territory that joins different highlights, including insufficient access to safe water, deficient access to sanitation and another framework, poor basic nature of lodging; stuffing and unreliable private status.

The characteristics associated with slums vary from place to place Slums are normally portrayed by urban rot, high rates of poverty, and joblessness. They are regularly observed as "rearing grounds" for social issues, for example, drug addiction, alcoholism, high incidence of mental illness, and suicide. In numerous poor nations, they display the high occurrence of illness because of unsanitary conditions, ailing health, and absence of fundamental social insurance.

EXAMPLE OF DIFFERENT SLUMS

DHARAVI Slum in Mumbai: Dharavi is a locality in Mumbai, Maharashtra, India. Its slums are one of the largest in the world, home to roughly 700,000 to about 1 million people, Dharavi is the second largest slum in the continent of Asia and the third largest slum in the world. With an area of just over 2.1 square kilometers (0.81 sq m) and a population density of over 277,136/km² (717,780/sq mi), Dharavi is also one of the most density population areas on earth.

The total current population of Dharavi slum is unknown, and estimates vary widely. Some sources suggest it is 300,000 to about a million. With Dharavi spread more than 200 hectares, this relates to a normal populace thickness appraise in the vicinity of 1500 and 5000 (600 to 2000 individuals for every section of land). With a proficiency rate of 69%, the slums in Mumbai are the most educated on the planet. There is an inexorably substantial reusing industry, preparing recyclable waste from different parts of Mumbai. Recycling in Dharavi is reported to employ approximately 250,000 people. It is also causes of high -density population. Dharavi exports goods around the world. This consist various products like leather products, textiles, jewelry, various accessories etc. markets of Dharavi's goods includes the stores of the United States, Europe, and the Middle East. The total turnover is estimated to be between US\$500 million, over US\$650 million per year, to over US\$1 billion per year. the per capita income of the residents depended on estimated population range of 300,000 to about 1 million, range between US\$500 TO US\$2000 Per year.

Urbanization is closely associated with modernization, industrialization and sociological condition. Urbanization is an indicator of development, but Purulia is not so developed in these factors. Especially the slums of Purulia portray a pathetic picture of life. There are 114 told slums in this district comprising of ineffectively constructed congested apartments in an unhygienic domain for the most part with insufficient foundation and absence of appropriate sanitation and drinking water offices.

OBJECTIVES

- To determine and examine the Socio-economic conditions of the population living in the slums of Purulia town.
- To compare the Quality of Life of the slum population living in different wards.

METHODOLOGY

The field survey was conducted among notified slums of each wards of Purulia municipality. Both primary and secondary data has used in this study.

PRE FIELD

In the initial stage, before field survey, the secondary information was collected from the municipality office, statistical handbook and from pilot survey record of government and non-government agencies. The secondary data such as no of the slum, no of household and size of the population of slum area were collected. The land use map basically the location map of slum area has collected from the municipality office of Purulia town. To analysis the quality of slum dwellers life ten standard variables have been chosen from reference literature (Jha, D.K. & V. K. Tripathi, V. K. (2014). Quality of Life in Slums of Varanasi City: A Comparative Study. *Trans. Inst. Indian Geographers*, 36, No.2, 173.)

FIELD

Primary data were collected through questionnaires. The survey was done by random sampling survey method. A number of 345 households were surveyed from 108 slums of the municipality through pre-prepared questionnaires and 15 households were surveyed from each ward by random survey methods. The survey was carried out within notified slums.

POST FIELD

After the field survey, collected sample data was compiled and analyzed by different methods. For determining the quality of life in slums, composite score index and standard deviation technique have been used. In order to calculate composite score index, 10 variables were taken to determine the quality of life. (Statistically, variables are taken as x_1, x_2, \dots, x_{10}). A composite score of all variables has taken as x value and the mean value is calculated. Then the standard deviation technique has been applied and by this, the slum areas of Purulia municipality has been categorized into four different categories, like as Good, Medium, Poor and Very poor. Finally, calculated data is represented by mapping technique.

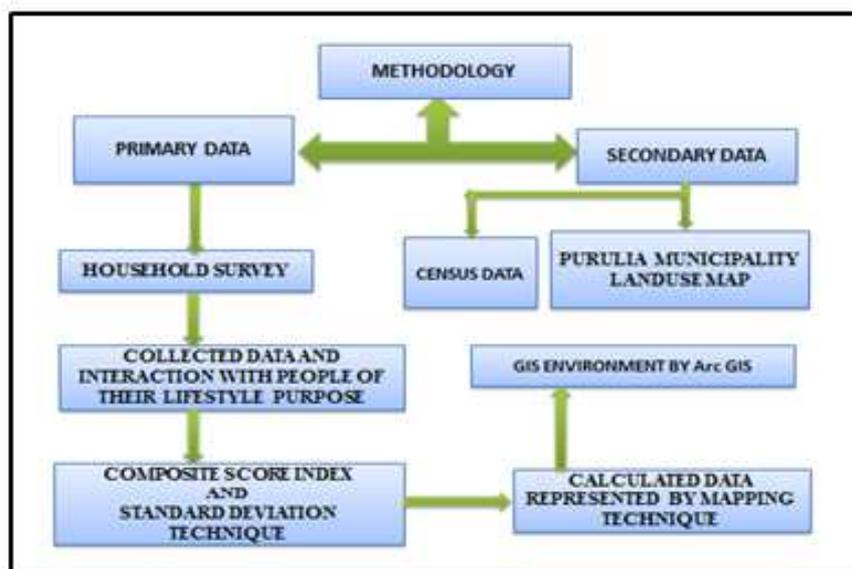


Figure 1: Methodology in Flowchart (Authors Own)

Table 1: Variables and Weightage Value

Variables	Parameters	Indicators	Weightage Value
X1	Source of lighting	Electricity	2
		Kerosene	1
X2	Fuel used for cooking	LPG	5
		Electricity	4
		Kerosene	3
		Coal	2
		Cow-dug-cakes	1
X3	Source of drinking water	Municipal tap	2
		Hand pump	1
X4	Housing condition	Pucca	3
		Semi pucca	2
		Kaccha	1
X5	Sewage disposal facility	Average	2
		Poor	1
X6	Place of waste dumping	Area fixed by municipality	3
		On roads	2
		Near water bodies	1
X7	Medical facilities	Gov. hospital	3
		Private clinic	2
		Traditional practitioner	1
X8	Literacy (% pop.)	Literate	2
		Illiterate	1
X9	Female literacy (% pop.)	Literate	2
		Illiterate	1
X10	Ration card type	Yellow Card(APL)	3
		Red card(BPL)	2
		Without card	1

Source: (Jha,D,K. & V. K. Tripathi,V. K. (2014). Quality of Life in Slums of Varanasi City: A Comparative Study. *Trans. Inst. Indian Geographers*, 36, No.2, 173.)

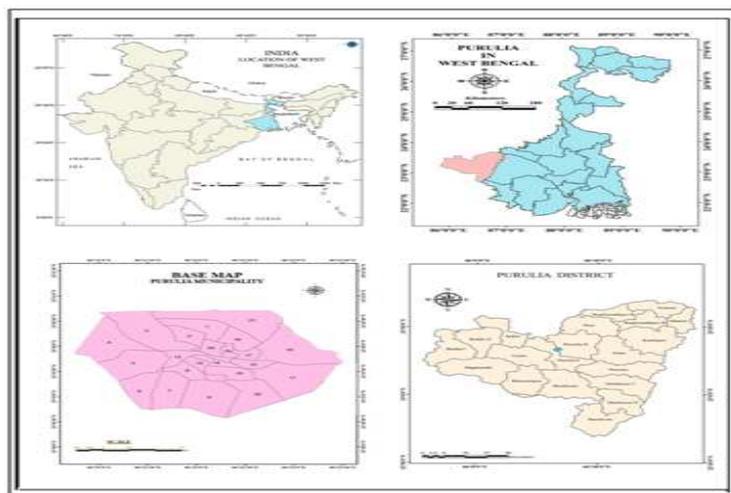


Figure 2: Location Map of the Study Area (Source: Authors own)

LOCATION OF SLUMS

Here we saw those slum locations are spread all over the city. Slum areas are easily determined because most of the slums are in situ slums in this municipality area. That means these slums are under revenue. The total slum area is 1205517sqm in the total urban area.

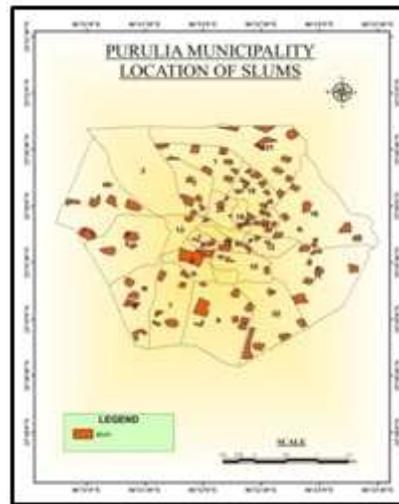


Figure 3: Location of Slum Area

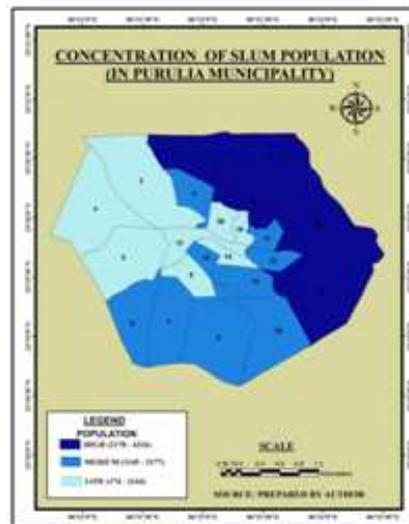


Figure 4: Concentration of Slum Population
(Source: Authors Own)

POPULATION

According to the census (2011) total population in Purulia municipality is 121436 and total slum population is 37840. The percentage of slum population in Purulia municipality is 31%.

CONCENTRATION OF SLUM POPULATION

Slum population is spread all over the city but the major concentrations are in near the railway area due to proximity to the living place. These areas are revenue free area. 45% slums are situated in this area in NE side. Ward no 1, 11,16,18,21 are high concentration zone because of such kind of facilities. 2, 6,7,9,10,12,15,17,22 are under medium concentration zone and others are low concentration zone.



Figure 5: Concentration of Slum Population in Govt. Vested Area (Railway)



Figure 6: Concentration of Slum Population in Govt. Vested Area (Railway)
(Source: Google Earth)

SLUM DENSITY

Population Density depends upon their area and concentration of population size. In Purulia Municipality the slum population's density is high in the center of the urban area because of an area is low and the concentration of population is high. The height -density of slum population is represented by the ward no 2, 12, and 16. Similarly the Medium density are represented by ward no 1, 11,12,14,15,18,19,20. And last, of all the lowest densities are presented by the ward no 3,4,5,6,7,8,9,13,21,22 which are concentrated in the western side of the municipality area.

Table 2: Slum Population Density

Ward No	Total Area	Pop of Slum	Density Per Sq Metre
1	72952	3194	0.04
2	14068	1624	0.12
3	31039	712	0.02
4	116179	964	0.01
5	51278	572	0.01
6	65684	1439	0.02
7	67435	1357	0.02
8	79402	1010	0.01
9	102869	1762	0.02
10	15597	1635	0.10
11	83942	2931	0.03
12	7903	1588	0.20
13	12826	174	0.01
14	29655	1144	0.04
15	30161	1472	0.05
16	87392	3710	0.04
17	39886	1761	0.04
18	66038	4326	0.07
19	12230	843	0.07
20	12161	560	0.05
21	112200	2885	0.03
22	94620	2177	0.02

(Source: Municipality data, 2011)

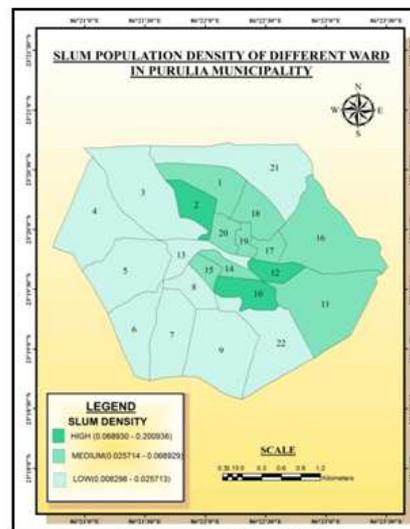


Figure 7: Concentration of Slum Population Density

PARAMETERS OF QUALITY OF LIFE

10 variables have been chosen for determining the quality of life in Purulia municipality. These are a source of light, fuel uses, drinking water, housing condition, ration card, sewage disposal, waste dumping, literacy, female literate-illiterate etc.

Source of Light (X1)

Electricity is a parameter of measurement of better quality life and kerosene is represents a low quality of life from this parameter. It is seen that 85% of households in slums used electricity, while 15% of households used kerosene. But it is citable that most of the people had lights through BPL.

Fuel Used for Cooking (X2)

Fuel use is also a parameter of measurement of quality of life. There are mainly three types of fuels are used. These are LPG, coal, and cow dung. It is seen that coal (65%) is used by maximum houses. The 25% slum dwellers are used LPG. Kerosene, cow dung cakes are also used as fuel.

Source of Drinking Water (X3)

Safe and pure water is a basic need for life. The sample survey shows that above 80% peoples are used municipality tap for drinking. 15% slum dwellers used water of hand pump and more or less 5% slum areas are used well.

Housing Condition (X4)

Several people in India even in the world live in deficient housing, mostly in slum settlements. The situation of developing country like India is worst. The type of house depends on the economic condition as well as the environment. A disgraceful scenario exists in this region where 80% of sample slums are either 'kuchha' or 'semi Pucca'. Few houses are Pucca at around 10%. Most of the houses had one room only. Some dwellers of slum had no house, they live in a tent.

Sewage Disposal Facility (X5)

Sanitation is important for a healthy life living. It is also necessary for pollution free environment. The most of the sample had poor sewage facility. Above 40% of the population is going to the open place.

Place of Waste Dumping (X6)

Most of the places there is no arrangement for the dumping of wastes. Maximum people used the road for the dumping of domestic waste. 40% of slum areas have used the place fixed by the municipality.

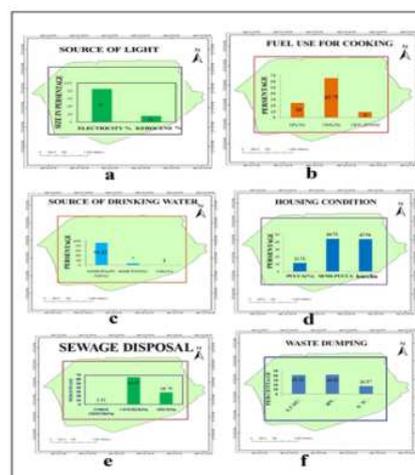


Figure 8: (A) Source of Light, (B) Fuel Use for Cooking, (C) Source of Drinking Water, (D) Housing Condition (E) Sewage Disposal, (F) Waste Dumping

Medical Facilities (X7)

In developing there are people suffering from malnutrition, anemia etc for the inadequate appliance of water and sanitation. Majority of the samples in the slums went to the government hospital for their treatment. Only a few people went to the private clinic. And some went to traditional or quack practitioners.

Literacy (X8)

Literacy is the most important indicator of socio-economic condition. Literacy rate indicates the quality of life of slums. According to this sample, literacy rate is better.

Fimele Literacy (X9)

Female literacy is not only the indicator of education but also it defines the socioeconomic condition and family structure. In the word no 4, 10, 20,12,17,23 the female literacy rate is good then other words.

Ration Card Type (X10)

Ration card is a parameter of indicates the quantity level in India. Red card holders are below poverty level, yellow card holders are above poverty level and some people don't have a ration card. The reason for not getting any card is non-cognizance and extended procedure. 70% people had BPL undertaken, 20% had APL and 5% had no card which indicates the poor condition of the society.

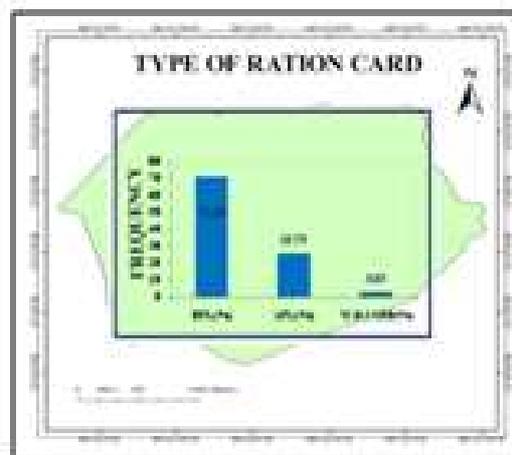


Figure 9: Type of Ration Card

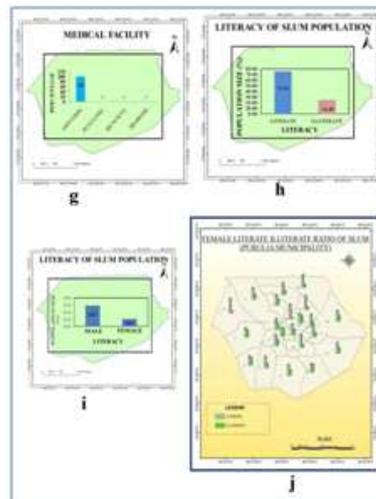


Figure 10: (G) Medical Facility, (H) Literacy of Slum Population, (I) Literacy of Slum Population and (J) Female Literate and Illiterate Ratio

LEVEL OF QUALITY OF LIFE

To determine the level of quality of life quantitative analysis has been done. Standard deviation and the composite score have been calculated to measure the quality of life.

Table 3: Composite Score for Slum of Purulia Town

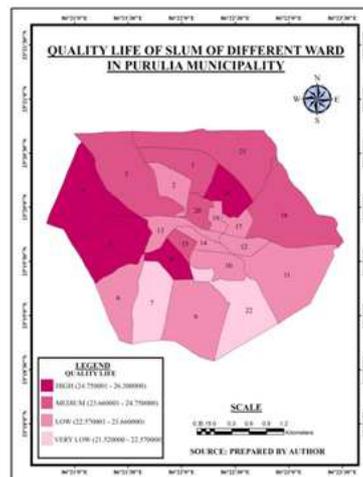
Ward	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	(X)	Mean	(X-Mean)	(X-Mean) ²
12	2.00	2.20	4.00	1.33	2.13	2.07	1.67	4.00	1.79	1.74	22.93	23.66	-0.73	0.54
17	1.80	1.93	3.87	2.00	2.27	2.13	1.40	4.00	1.66	1.73	22.79	23.66	-0.87	0.76
4	1.87	4.20	3.73	1.67	2.67	1.67	2.67	4.00	1.92	1.88	26.27	23.66	2.61	6.81
3	1.80	2.60	4.00	1.20	2.07	1.87	2.80	4.00	1.69	1.71	23.73	23.66	0.07	0.01
2	2.00	2.80	3.93	1.87	2.07	2.00	1.00	4.00	1.72	1.66	23.05	23.66	-0.61	0.38
20	1.73	3.60	4.00	2.33	2.33	0.13	2.13	4.00	1.87	1.91	24.05	23.66	0.39	0.15
1	1.87	2.33	4.00	1.87	2.40	1.87	2.00	4.00	1.82	1.74	23.89	23.66	0.23	0.05
19	1.73	2.60	4.00	1.67	2.07	2.00	2.00	4.00	1.67	1.57	23.30	23.66	-0.36	0.13
6	1.67	2.40	4.00	1.27	2.13	2.00	2.47	4.00	1.68	1.57	23.18	23.66	-0.48	0.23
10	1.73	2.40	3.93	1.07	2.07	1.27	2.67	4.00	1.76	1.81	22.70	23.66	-0.96	0.92
11	1.73	2.60	3.93	1.40	2.07	2.00	2.33	4.00	1.69	1.66	23.41	23.66	-0.25	0.06
15	1.93	2.93	3.87	1.53	2.20	1.67	2.53	4.00	1.65	1.56	23.87	23.66	0.21	0.04
5	1.93	3.20	3.67	1.73	2.07	2.00	2.93	4.00	1.70	1.57	24.80	23.66	1.14	1.31
14	2.00	2.53	4.00	1.67	2.13	2.00	1.53	4.00	1.72	1.67	23.26	23.66	-0.40	0.16
22	1.73	2.27	3.87	1.33	2.20	1.40	2.20	4.00	1.61	1.51	22.12	23.66	-1.54	2.38
16	1.53	2.00	4.00	1.93	2.20	1.80	2.87	4.00	1.74	1.66	23.73	23.66	0.07	0.00
8	1.87	2.87	3.87	2.33	2.40	1.93	2.87	4.00	1.71	1.68	25.52	23.66	1.86	3.46
13	2.00	2.00	3.87	1.80	2.27	1.53	2.67	4.00	1.77	1.67	23.57	23.66	-0.09	0.01
9	1.93	2.67	4.00	1.67	2.27	1.07	2.13	4.00	1.69	1.67	23.10	23.66	-0.56	0.32
21	2.00	2.73	3.80	1.60	2.40	1.33	2.53	4.00	1.85	1.80	24.05	23.66	0.39	0.15
7	1.87	2.00	3.80	1.33	2.00	1.13	1.87	4.00	1.80	1.72	21.52	23.66	-2.14	4.58
18	1.93	3.60	4.00	2.27	2.60	1.40	2.07	4.00	1.90	1.85	25.62	23.66	1.96	3.85
											Total	520.46	Total	26.28
											Mean	23.66		
											Variance	1.19		
											S.D	1.09		

Table 4: Levels of Quality of Life in Slums of Purulia Town

Level of Quality of Life	Statistical Value	Composite Value	Name of Wards
Good	to+2	>24.75	18,8,4,5
Medium	to+	23.66-24.75	15,1,20,3,21,16
Poor	to-	22.57-23.66	9,13,14,5,11,10,6,19,2,17,12
Very Poor	to-2	<22.57	7,22

The quantitative analysis is appropriate and four level of quality of life were gotten by analyzed. Word no 18, 8, 4, 5 deals a good quality of life which is better than other slums. A word no 15, 1, 20, 3, 21, 16 was under the medium quality of life. A word no 9, 13, 14, 5, 11, 10, 6, 19, 2, 17, and 12 has poor quality of life and word no 7 and 22 has low-quality life.

The wards 18,8,4,5 are belonged to a good quality of life because of their fuel used, house type, Disposal facility, Waste dumping, Literacy, female literacy, male-female ratio are good more than other slum populations living in different wards.

**Figure 11: Comparative Study of Quality of Life**

CONCLUSIONS

The research generally shows the slum dwellers live in a very bad social and physical environment. Their lifestyle and quality of life are in worse condition. They are deprived of different types of basic facilities. Per capita income is very low. They are suffering from different types of serious diseases because of the unhygienic environment, lack of proper facilities and low per capita income. But in the case of Purulia municipality's slum dwellers, they are enjoying better facilities than other urban slum dwellers. According to census data the slum population density in Purulia municipality is low. The population density is 1000 people per sq Km. The slums are situated away from the water body or marshy area, so they are safe from different types of disease like malaria. The study established that 75.51% population is literate. The male and female ratio is 50.51 and 49.49. So that is indicating that they are concerned about their life condition. The source of light has been used from electricity by 85% people. Most of the people (65.75) are using coal for cooking. On the other hand, 92.12% people use municipality tap for drinking water and 100% people enjoyed Proper governmental medical facilities. Most of the people (71.21%) are categorized under another backward category (OBC), so they enjoy different types of government facilities. Finally, these conditions have established that their quality of life is moderately good. Here the Author's suggestion

is to enhance the quality of life in slums. NGOs, Governments and private sectors should take the necessary steps. The slum density of Purulia town is low compared to other slum areas of west Bengal. So it would be easy to maintain or planning according to slum dwellers quality of life.

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