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Household and civic amenities as a key indicator of quality of life: A study from five selected slums of Kolkata municipal corporation, India

Saraswati Kerketta[1], Mousumi Karmakar[2]
[1] Assistant Professor, Rabindra Bharati University, Kolkata, West Bengal, India
[2] Post Graduate, Rabindra Bharati University, Kolkata, West Bengal, India

Abstract
India is one of the most developing countries in the world, where higher growth rate of many metropolitan cities has been observed. But, in most cases slum is a tragic reality of metropolitan cities. Quality of life of dwellers in slums is in very poor conditions.
The present study is based on the primary survey which was conducted in different slums in Kolkata Municipal Corporation. A total number of 300 household samples were collected from ward number 1, 2, 7, 19 and 49 of Kolkata Municipal Corporation. All the selected wards are notified slum area. In this study, a set of indicators of household amenities and civic amenities was studied to examine the access to these amenities by the slum dwellers of the study area.
To find out the quality of life composite index method is applied and comparison between slums has been done using normal mathematical expression. The study revealed that about 21.67% household survive with untreated drinking water. Hygiene is the major priority of modern human civilization but 65% households of slums are not having proper latrine facility. Lack of drainage facility is also a matter of concern for the selected slums. Government of India should focus the slum areas for the overall development of the cities and the nation as a whole.

Keywords: slum; household and civic amenities; quality of life; Kolkata municipal corporation

Introduction

In the era of globalization, urbanization is an important sign of development for any developing nation. But in the present scenario poverty is more prone to urban area than rural areas, which is a harsh truth of the developing nations (Rao, 1999). The poor peoples of urban areas generally concentrate in slum areas because of cheap accommodation or free of cost living in these areas. Urban centers attract the unemployed populatuion of the smaller town and rural area and due to influx of huge population and expensive life style of urban areas makes a platform to construct more slums in the urban areas (Das, 1997). But the irony is that, the condition of slums deteriorate from time to time and these areas always remain fare away from development and the people have to live in the paw of deplorable condition for forever (Goswami *et al.* 2013). Lack of drinking water, sanitation facilities, garbage disposal system, house structure, narrow passage, and drains everywhere make the slums prone to epidemics condition, and yes create challenges for the urban planning and development which is need of the time.
In the present time, the slum has become common phenomena in more or less every urban centers of the world, especially in urban centers of the developing nations, including India. India is a country where every state and UT has some percentage of slum areaa. A total number of 65.49 million slum inhabitants live in 13.92 million households spread across 31 States/UTs of the country. Only four States/UTs- Manipur, Daman & Diu, Dadra and Nagar Haveli and Lakshadweep have not reported any slum(Slum in India, 2015). It is alarming to note that the slum population constitutes 5.4 percent of the total population of the country and 17.4 percent of the total urban population of the country (Slum in India, 2015). West Bengal records a significant amount of slum population, according to the census of India, 2011, the number of slum population is 6418594 which occupies 7.71 percent of total population of west Bengal. West Bengal records 3rd highest number of slum dwellers in India.
A slum is an overcrowded and unsanitary settlement with unhygienic environment and semi-skilled or unskilled labour. Quality of life of any settlement depend on the civic and housing amenities. Thus, housing and civic amenities is considered as a key indicator of socio-economic development (Ali *et al.* 2015) [1]. Many scholars have tried to establish the relationship between household amenities and civic amenities with the quality of life and they found that "a good hygienic environment make a good human being" with lot of development with a key conclusion that to stop the growth of slums we have to understand dwellers quality of life (Fadaus's, 2012; Mahabiret.al 2016; Chhachhiya 2016; Bose *et al.* 2016) [12]. Development of people and the improvement of living condition is the ultimate goal of every developing nation.
The present study focuses on availability and utilization of various household amenities such as source of drinking water, source of lighting, drainage, bathing facility, toilet facility, kitchen facility etc. It also tries to investigate into the problems experienced due to scarcity of these amenities. An attempt has also been made to investigate the relationship between household and civic amenities with quality of life of slum dwellers.

Materials and Methods

The present study is based on the primary survey which was conducted in different slums in Kolkata Municipal Corporation. A total number of 300 household samples were collected through from 1, 2, 7, 19 and 49 number ward of Kolkata Municipal Corporation. All the selected wards are notified slum area. In this study, a set of indicators of household amenities and civic amenities was studied to examine the access to these amenities by the slum dwellers of the study area. These amenities are like percentage of households having access to drinking water, having electricity, latrine, kitchen inside and bathroom within the premises are taken into account to examine the availability of amenities in the slum area of Kolkata. To know the availability and accessibility of basic amenities in these slums, primary data was collected by using a pre tested questionnaire. A series of questions were asked to the people residing in the slum area in order to understand their health condition, and accessibility to the household and civic amenities. For the analysis the regional variations were eamined across the slums of Kolkata Municipal Corporation. Statistical tools have been used like univariate and bivariate analysis to know the availability and accessibility of household and civic amenities in the sampled slum areas. Mean and standard deviation was used for making composite index. The levels of availability of amenities in slum area is determined by composite score. Composite score was calculated from 10 variables from household and civic amenities. These variables were assigned a weightage score according to their impact on living standard in urban area which is similar to the study done by Darshan *et al* (2014). Composite Scores of all the variables are taken as X value and Mean value is calculated. After that a reference table has been created to classify the slums in terms of their level of household and civic amenities.

Study area at a glance

Kolkata is the capital of West Bengal and 3rd largest city in India. It is situated on the left bank of Hooghly River. Kolkata is located in the eastern part of India at 22 º 28' N to 22 º 58' N and 88 º 10' E to 88 º 27' E. Nadia, Hooghly, Howrah, South 24 Parganas and North 24 Parganas are the circumambient of Kolkata. it is the principal commercial, cultural, and educational centre of East India. As of 2011, the city had 4.5 million residents; the urban agglomeration, which comprises the city and its suburbs, was home to approximately 14.1 million, making it the third-most populous metropolitan area in India.

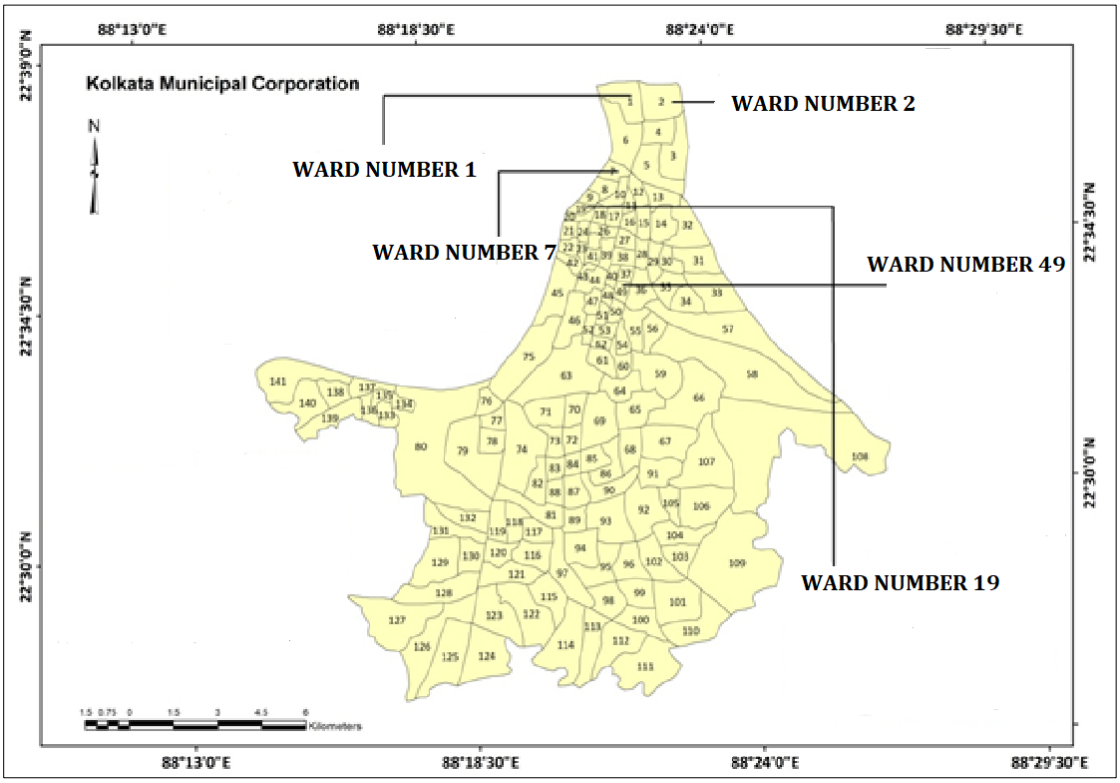

Fig 1

Result and Discussion

Demographic structure of any society reflects its socio-economic development. In the studied area, there were 1488 dwellers live in these 300 household which consists of 678 male and 586 female adult slum dwellers. Out of the total sample 215 are children. In the study area sex ratio is 864 female per thousand male.

Drinking water is essential for all the community. Safe water refers to water supplied from covered sources such as through taps, tube wells and hand pumps. From the study we found two type of water qualities i.e. treated and untreated water. In the present study out of 300 samples 78.33% household getting the supply of treated water and remaining 21.67% household have access to untreated drinking water. In ward number 1 there was 46.67% household is getting untreated drinking water and this figure in ward number 2 is 43.33%.

Electricity is considered as a necessary household amenities and has bearing on the quality of life of individuals in the household.

The availability of electricity facility among the wards reveals that 65.33% household getting the facility of electricity but there are no sub meter and remaining 34.67% household have electricity with sub metre. In the ward number 7 there was complete absent of sub metre whereas ward number 1, more than 90% of household have electricity with sub metre.

Kitchen is also a key determinant of health of the people of slums. In the present study only one household have separate kitchen in ward number 1. In the case of ward number 1, 80% household do not have separate kitchen, even the kitiched is within the household premises and about 18.33 % though having their kitchen outside the house but those kitchen are not properly separate from the household. Most of the families use crop residual for cooking. When crop residual burn it produce too much smoke and thus creating environmental pollution in making hazards to the health. Such practice expose to respiratory problem to the woman working in kitchen in particular and overall slum dwellers in general. Latrine Facility is one of the very essential components of the sanitation. Sanitation is an integral component of public hygiene and health in India. It contributes to clean and improved environment and social development. In the present study we found that a large number of households do not have any type of latrine facility, and they practice open defecation. Around one third or 65% of the total sampled household do not have any latrine facility within the premises and they used to practice open defecation. In the present study out of the total collected sample 6.33% households are pucca houses, 65% are katcha houses and 28.67% Dwellings are semi-pucca. All slums are located on either side of rail line or side of the drain or canal. Though, houses of the dwellers are pucca, katcha, Semi-pucca. But type of house does not present complete picture. Materials used for construction of houses also indicate the quality of life. It was found that several houses are constructed using plastic, sand bags, wood, rope, plant residual etc. In the study are it was found that though some of the roads are made of concrete but not motorable because roads are very narrow and the condition become worse in the rainy season. In many wards internal road are made with sand bags which are temporary and dangerous. Even walking on these internal road is too much difficult. So in the study area it was found that only 3% households getting the facility of motorable road.

The system, by which the waste material is carried away is known as sewage system. A suitable sewage and drainage system is important for cleenliness and maintaining hygiene in any residential area. Without proper drainage and sewerage system water logging occurs, and it create hazardous situation. In the present study it was found during field survey that there is no proper drainage facilities available and even sewarge system is in very poor condition. Out of the total sample 40% houses far away from any drainage facility. There are 35% household with the facility of drainage but drains are open or we can say 'kaccha Nala'. This also create poor hygienic condition in the slum area.

Some kind of waste are serverly hazardous which pollute the environment. It is derived from the present study that 61.33% household are situated far away from the facility of garbage disposal. Though there are some kind of disposal facility in some wards, but most of the slum dwellers don't use proper waste disposal facility, they use to throw the garbage in open field, which is very alarming for the human health and well-being.

Around half the urban population in developing countries is suffering from one or more of the diseases associated with inadequate provision of water and sanitation (DFID, 2001). Therefore medical facility is a significant parameter of measurement of quality of life. In the present study it was found that most of the slum dwellers do not have access to have even basic health facilities.

Quality of life

Quality of life of the slum dwellers has been quanitivaly analysed from aggregates of all the variables. A composite score has been calculated by adding up the total of all the variables for different slums separately (Table 1).The ward number 49 enjoys a good availability of amenities and dwellers of the ward getting the maximum facility compared to others wards in the study area. Whereas ward number 7 and 19 are far away from the availability of basic household and civic amenities such as drinking water, latrine facility, house structure, street road and light, garbage disposal facility etc. it has been found that where the slums which has less access to basic household and civic amenities has poor quality of life in comparison to those slum dwellers who have better access to these basic civic amanities. Qulity of life directely proportional to the access to household and civic amenities.

Table 1

Variable	Parameter	Indicators	Weight-age Value	WARD 1		WARD 2		WARD 7		WARD 19		WARD 49	
				% of HH	X Value	% of HH	X Value	% of HH	X Value	% of HH	X Value	% of HH	X Value
X1	Drinking Water	Within Premeses Treated	4	15	0.6	0	0	11.7	0.4668	10	0.4	13.3	0.522
		Within Premises Untreated	3	1.67	0.05	0	0	0	0	0	0	0	0
		Outside Premises Treated	2	88.33	0.77	56.67	1.13	88.3	1.77	93.3	1.87	86.7	1.73
		Outside Premises Untreated	1	45	0.45	43.33	0.43	0	0	0	0	0	0
X2	Lighting	Electricity	4	100	4	100	4	96.3	3.85	100	4	100	4
		Kerosene	3	0	0	0	0	3.33	0.09	0	0	0	0
		Solar	2	0	0	0	0	0	0	0	0	0	0
		No Light	1	0	0	0	0	0	0	0	0	0	0
X3	Kitchen	Separated Inside	4	1.66	0.07	0	0	0	0	0	0	0	0
		Separated Outside	3	0	0	0	0	0	0	0	0	0	0
		Not Sepated Inside	2	80	1.6	100	2	0	0	80	1.6	86.7	1.73
		Outside	1	18.33	0.18	0	0	100	1	23.3	0.23	13.3	0.13
X4	Latrine	Self Within	5	6.67	0.33	0	0	0	0	0	0	20	1

		Govt. Within	4	0	0	0	0	0	0	0	0	0	0
		Self-Outside	3	0	0	0	0	48.3	1.45	0	0	0	0
		Govt. Outside	2	93.33	1.87	100	2	0	0	88.7	1.77	80	1.6
		No Facility	1	0	0	0	0	51.7	0.52	11.7	0.12	0	0
X5	House Structure	Pucca	3	0	0	0	0	0	0	0	0	31.7	0.95
		Semi-Pucca	2	85	1.7	93.33	1.87	0	0	0	0	68.3	1.37
		Katcha	1	15	0.15	6.67	0.07	100	1	100	1	0	0
X6	Internal Road	Motorable Pucca	4	0	0	0	0	0	0	0	0	0	0
		Motorable Katcha	3	15	0.45	0	0	0	0	0	0	0	0
		Non Motorable Pucca	2	85	1.7	100	2	0	0	0	0	100	2
		Non Motorable Katcha	1	0	0	0	0	100	1	100	1	0	0
X7	Drainage	Closed	3	56.67	1.7	0	0	0	0	0	0	68.3	2.05
		Open	2	43.33	0.87	0	0	100	2	0	0	31.7	0.63
		No Facillity	1	0	0	100	1	0	0	100	1	0	0
X8	Garbage Disposal	Municipal Car	3	45	1.35	40	1.2	0	0	0	0	85	2.55
		Others	2	23.33	0.46	0	0	0	0	0	0	0	0
		No Facility	1	31.67	0.32	60	0.6	100	1	100	1	15	0.15
X9	Health Facility	Govt. Hospital	3	100	3	100	3	100	3	100	3	80	2.4
		Private Clinic	2	0	0	0	0	0	0	0	0	20	0.4
		Others	1	0	0	0	0	0	0	0	0	0	0
X 10	Street Road	Concret	4	0	0	0	0	0	0	0	0	0	0
		Unmettalled	3	0	0	0	0	0	0	0	0	0	0
		Mettalled	2	100	2	100	2	100	2	100	2	100	2
		Others	1	0	0	0	0	0	0	0	0	0	0

Table 2

Slum	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X	(X-x)	(X-x)^2
Ward No 1	1.87	4	1.85	2.2	1.9	2.15	2.57	2.13	3	2	23.63	1.974	3.90
Ward No 2	1.56	4	2	2	1.9	2	1	1.8	3	2	21.3	-0.36	0.13
Ward No 7	2.23	3.94	1	1.97	1	1	2	1	3	2	19.14	-2.52	6.33
Ward No 19	2.27	4	1.83	1.89	1	1	1	1	3	2	18.99	-2.67	7.11
Ward No 49	2.26	4	1.86	2.6	2.3	2	2.68	2.7	2.8	2	25.22	3.564	12.70
Total											108.3		30.16

The mean value of composite score is 21.656 with standard deviation = 2.46. The Availability of amenities under deviation is grouped (Table 2).

Table 3

Quality of Life	Statistical Value	Composite Score	Ward No.
Good	To +2	24.116 – 26.576	49
Medium	To +	21.656 – 24.116	1
Poor	To -	19.196 – 21.656	2
Very Poor	To - 2	16.736 – 19.196	7, 19

Conclusion

In the recent period, the rapid development in secondary and tertiary sector has helped in increase in urban population in many developed and developing countries. The rapid increase in the population in the urban areas has resulted in developing of urban slums.

The study highlights that the condition of the people of the slums is very poor.

Inadequate household and civic amenities and less access to basic health facilities has led these slum dwellers in very pathetic condition. Government of India has already initiated many flagship programs like “Swachh Bharat” for clinliness and better hygiene condition and “Pradhan Mantri Awas Yojna” to make house for all, and others schemes to improve the condition of every citizen of India, including these slum dwellers. But the need of the time is to focus these slum areas for the overall development of the cities and the nation as a whole.

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