

A Geographical Study on Quality of Life in the Slums of Kolkata Municipal Corporation

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Abstract

The present paper is an attempt to highlight the quality of life (QOL) that exists in the slums of Kolkata Municipal Corporation (KMC). The paper examines whether the quality of life is same in all the slums or not and a comparison has been made between different slums. Among slums of Kolkata Municipal Corporation 10 slums have been selected for study area. For determining the quality of life in slums, composite index and standard deviation techniques has been used. To calculate the composite index 30 variables have been chosen to determine QOL. The result shows that there are variations in quality of life in the selected slums. So, different development strategy for each category of slum is suggested for their improvement.

Key words: Slum, overcrowding, poor sanitation, quality of life.

Introduction:

Slums are universal phenomena. Growth of slum is the natural consequence of rapid unplanned urbanization. In India as per census 2011 report, 65.49 million people lived in slum which is 5.4 percent of the country's total population and 17.4 percent of total urban population. In India concentration of slum population is high in metropolitan cities like Mumbai, Kolkata, and Delhi etc. As per census 2011 report Kolkata is the second largest city considering the percentage of slum household. In Kolkata 31.35 percent of population lived in slum. Generally slum areas tend to be inhabited by poor working class people characterized by overcrowding, lack of basic services, poor sanitary system, etc. So the present paper is an attempt to highlight the quality of life (QOL) that exists in some selected slums of Kolkata Municipal Corporation.

Concept and definition of quality of life (QOL) -

The term 'quality of life' is often referred to as 'well-being'. Sinha et al. (2006) commented that quality of life is closely related with the social, cultural, economic and political life of people. Andrasko (2009) defines quality of life as the degree to which a set of characteristics of human life meets the demands placed upon it. He indicates about the objective and subjective dimensions of quality of life. Wood-Dauphinee et al. (2002) defines subjective quality of life as a reflection of an individual's overall perception of and satisfaction with how things are in their life."

Susinghe (2015) explain that quality of life can be measured using two different perspectives as objective and subjective indicators for individual and societal levels. Objective measurements can identified through environmental conditions such as per capita income, literacy rate, employment rates, labor force rates etc. Subjective parameters are measuring feelings of satisfaction, happiness or related mental attitudes.

Concept and definition of slum –

The word “*slum*” first appeared in 19th century London, when the increasing urban labor class peoples moved into overcrowded and poorly serviced hutments, living close to the factories and industrial plants that employed them. (UN-HABITAT-2006/7). Initially *slum* indicates low standard rooms, but over time the concept was changed into overpopulated urban area inhabited by very poor people.

To identify slums on a global level the operational definition of a slum household proposed by the un-habitat may be considered. The UN-HABITAT(2007) defines a ‘*slum household*’- as a group of individuals living under the same roof in an urban area who lack one or more of the following:

1. Durable housing of a permanent nature that protects against extreme climate conditions.
2. Sufficient living space which means not more than three people sharing the same room.
3. Easy access to safe water in sufficient amounts at an affordable price.
4. Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.
5. Security of tenure that prevents forced evictions.

According to the slum area (improvement and clearance) act of 1956, enacted by the government of india, ‘*slums*’ have been defined as those areas where buildings are in any respect unfit for human habitation. Physically, slums consist of clusters of huts comprising several rooms constructed with temporary building materials, where each room is inhabited by a family sharing a common latrine, without arrangements for water supply, drains, disposal of solid waste and garbage within the slum boundaries.

Census of India (2011) defines ‘*slum*’ as residential areas where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of street, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health.

For the purpose of census, slums have been categorized and defined as of the following three types:

A) Notified slums-All notified areas in a town or city notified as ‘*slum*’ by state, UT administration or local government under any act including a ‘*slum act*’.

B) Recognized slums-all areas recognized as ‘*slum*’ by state, UT administration or local government, housing and slum boards, which may have not been formally notified as slum under any act.

C) Identified slums-A compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities.

As per census 2011 report, there are 37072 notified slums, 30846 recognized slum and 40309 identified slums exists in India.

Objectives:

The main objective of the present study is to examine the quality of life that exists in the slum areas of KMC. This study identifies the parameters of QOL and compares them among different slums. The study also highlights the accessibility of the slum dwellers to their basic needs. Moreover, it is also the objective to suggest some suitable ways to improve QOL.

Review of previous research-

Researchers from a wide range of theoretical perspectives have shown an interest about slum and quality of life in slums. The researches done in the field of slums and QOL have been categorized as-

Physical condition of the slums-

Abrams (1953) explained that slum is a common problem in almost every city of the world. According to him, slum condition became worst when the physical slum was accompanied by overcrowding. Sen (1954-58) had examined and studied the spatial pattern and characteristics of the slums and the squatters of Calcutta in 1954-58. His analysis was mainly confined to the construction of houses in slums and the availability of basic amenities.

Socio-economic conditions and QOL-

Sen. (1985) while explaining subjective welfare explained that people can become so normalized to their conditions of material deprivation and social injustice that they may claim to be entirely satisfied. Dutt et. Al. (1994) analyzed how the work pattern of the slum dweller is related to the types of job opportunities available in the city. They also examined that settled migrants' low incomes ensure that they become spatially immobile, thus proximity to a work place is essential to a slum-dweller. Sinha et. Al. (2007) studied about ecology and quality of life in urban slums. They examined the quality of life in the cities of Munger and Bhagalpur. They highlights how the quality of life revolves around the concentration of population, surrounding environment, transportation linkages, location of shopping establishments, dress material of people, food habit and the level of education and recreation of the inhabitants in the urban centers .Das (2013) examined the quality of life in the slum of Balurghat town, West Bengal. Her study attempts to provide some insights into recent changes in the slum settlements that make for a good quality of life of slum dwellers in the study area. Sharma and Kaushik (2013) studied about the socio-economic condition of the slum dwellers of Kurukshetra city. They observed that the slum dwellers earn '*hand to mouth*' from their occupation and they are unable to fulfill the basic requirements of life. Tripathy (2013) studied about the socio-economic status of the marginalized semi-urban slum dwellers of Ballavpur mouza in the Midnapur district of West Bengal. His study reveals that in spite of belonging to BPL category, most of the slum dwelling families have some assets like bi-cycle, DVD player, mobile phone, expensive TV, some of them have latest LCD or LED tv, bike and other expensive amenities also. Dawn et al. (2014) observed that malnutrition is highly prevalent among low-income slum and shanty dwellers of Kolkata.

Social problems in slums-

Ghosh et al. (2012) analyzed the patterns of alcohol consumption among male adults at a slum of Kolkata. Their study revealed that consumption of alcohol is high among slum dwelling males.

Govindaraju (2012) stated that the slum dwellings are quite uncomfortable and suffocating where sub-human living conditions prevail. He found that alcoholism is one of the prominent factors, which is highly responsible for weakening the economic conditions of the slum dwellers irrespective of caste and sex.

Study area –

Kolkata stands on the eastern bank of river Hooghly. Kolkata (also known as Calcutta) is now the capital of west Bengal a state of India. Kolkata is situated at the longitude and latitude of 88° 30'e and 22° 33' n. Kolkata, which is under the jurisdiction of the Kolkata municipal corporation (KMC), has an area of 185 square km. (71 square mile). It is the third most populous metropolitan area in India. As per Census 2011, population of this city is 4.4 million and population density is 24252 persons per square km. The area under Kolkata Municipal Corporation (KMC) consists of 144 wards that are grouped into 16 boroughs.

Slums of Kolkata:

In Kolkata 32.35 percent population lived in slums in the year 1981, it became 33.39 percent in 1991. It was decreases slightly (32.60 percent) in 2001. In this year 1.5 million people, or one third of Kolkata's population, lived in 2011 registered and 3500 unregistered slums. As per district census handbook of 2011, population of Kolkata is 4496694 and slum population is 1409721, which mean 31.35 percent population of Kolkata lived in slums.

Sample slums for this study:

For the purpose of sampling only registered slums are considered. As per KMC 'bustee' department report (2009) there are 1236 registered 'bustees' (slum) in Kolkata. For this study only 10 slums were selected purposively. (Table-1)

Table: 1-Selected Slums of KMC for the study

Sl. no	Bustee name/address	Borough No	Ward no	Approx. area (sq.mt.)	Total dwellers	Density of population/sq.mt*
1	20\1, KhagendraChatterjee road	1	6	49497	7023	0.141
2	85 Belgachia road	1	3	31975	6377	0.199
3	1-6 Sasthitala road	3	29	110404	11498	0.104
4	15\h\6\1 8\ a, 8\c 7\7 Chamru Singh Lane	3	29	21160	5502	0.260
5	13,15,Baithak Khana Road	5	37	75340.49	10301	0.136
6	8, Pagladanga road	7	57	91117.9	38155	0.418
7	3,42 ,21a 2\4c Mayur Bhanj Road, Mominpur	9	78	211152.5	23977	0.113
8	Uttar Panchannagram, BasantiKulti Road	12	108	147764	8906	0.060
9	J105 j158\1 j124 Paharpur Road	15	133	518700	24238	0.046
10	T315 t340 t346\3 Panch Para, BaroBaganBustee, Metiaburuj	15	138	88000	8180	0.092

Source: Survey report of Department of *bustee* services, KMC, 2009, * computed by author

Methodology-

Data collection –The study is based mainly on primary data. Some secondary data are also collected from the department of *bustee* services, Kolkata Municipal Corporation. To collect the primary data, first 10 slum pockets was selected purposively from different parts of Kolkata municipal corporation (Figure-1).then 20 households from each slum pockets were surveyed with interview schedule. Thus total 200 households were surveyed by the researcher.

Anthropometric measurements such as height, weights are valuable indicators of nutritional status as well as QOL. So to analyze the nutritional status and health condition of children from new born to 14 years age, height and weights are measured.

Data analysis techniques - For determining the quality of life in slums composite index and standard deviation techniques (R.L.Singh and Rana P.B. Singh, 1979, Jha and Tripathy 2014, Malik, 2016, Khan and Malavya, 2017, Hoque, Khan &Huda 2017) have been used. To calculate the composite index 30 variables were chosen to determine QOL. Statistically each variable was post fixed with x_1, x_2, \dots, x_{28} . Reasonable weightages was assigned to each variable (Table 2).Then composite scores of all variables are calculated. The scores are taken as x value and mean and

standard deviation value is calculated (Table 3). The quality of life is grouped based on deviation and finally comparative analysis is done to show QOL in different slums (Table-4).

Parametric explanations of quality of life-

In this paper both subjective and objective parameters are taken to measure quality of life. These are as follows

A) Objective parameters-

Doxiadis (1970) mentioned in his study that big cities are inevitable phenomenon and the QOL within it is bad. As it is not possible to go back to the concept of small cities by leaving all the facilities of modern big cities, the only way is to try to improve the QOL in it. But it is impossible to discuss QOL or any other important phenomenon of human settlement without referring to their size. Doxiadis classified fifteen different ekistics units by sizes. The smallest unit is man himself as an individual. The second unit is room which consists of two persons and third unit is house consists of 5 persons. Thus the units become larger and the largest of the fifteen units is Ecumenopolis or universal city.

While analyzing the QOL, the parameters cannot be same for all ekistics units due to their variation of sizes. Here QOL for the slums is explained taking ekistics unit two and three, i.e. room and house into consideration.

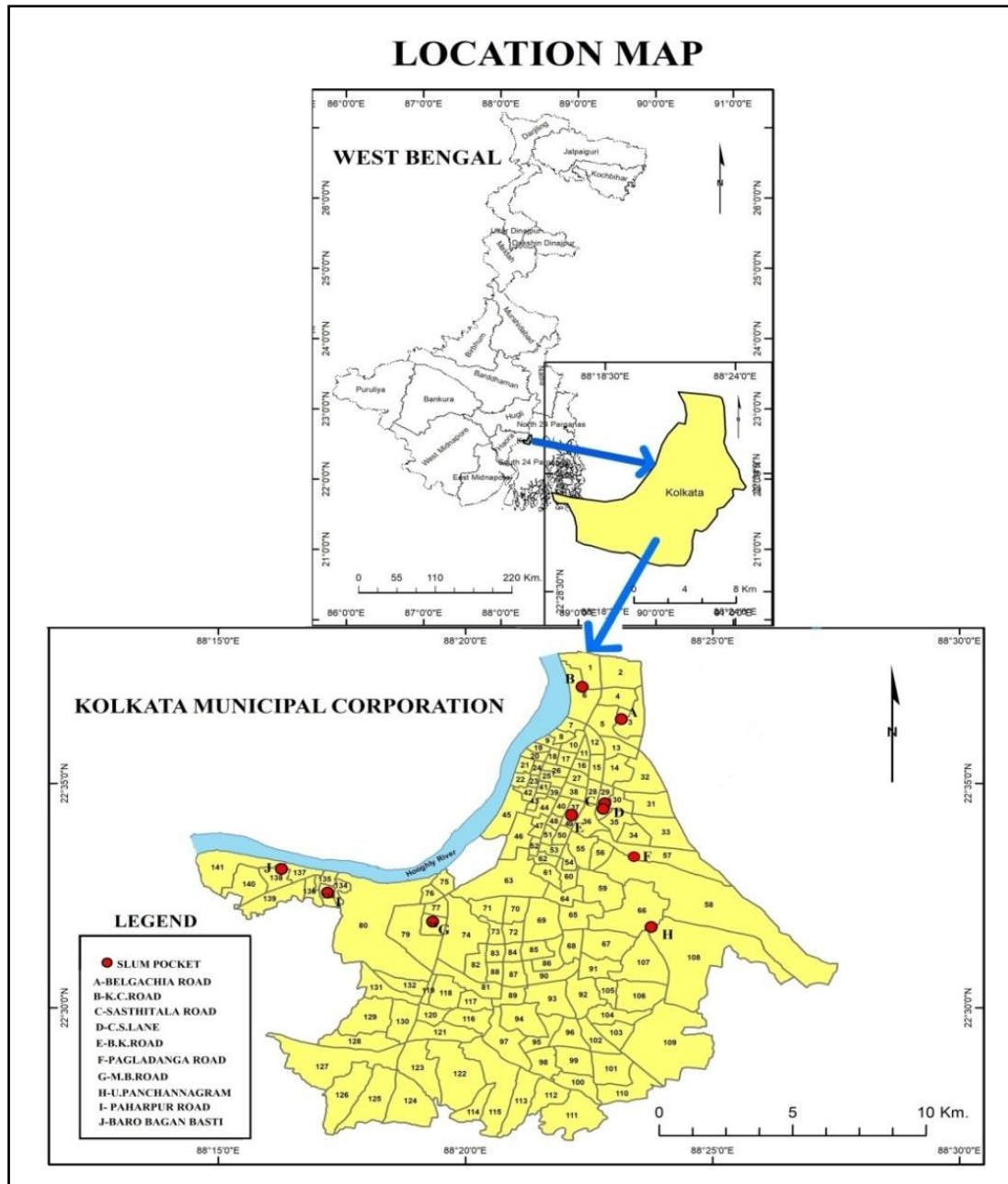


Figure-1- Location of the study area

a) **Physical conditions of slum-**

X1- Occupancy rate-

Occupancy rate is a sign of level of overcrowding of population in a particular family. (Sinha et al., 2007) occupancy rate is measured by number of person per room. UN-HABITAT (2007) determined some criteria to identify slum among which lack of sufficient living space which means more than three people sharing the same room is one. In different slums of Kolkata Municipal Corporation it was observed that occupancy rate varies with location and religious composition. In Muslim dominated slum occupancy rate is quite high than Hindu dominated slum. For example occupancy rate is highest in the slum areas of Chamru Singh Lane. Here 70 percent slum hutments occupied by more than six persons per room. Location of the slum

is another determinant of occupancy rate. For example Baithak Khana road slum is located near Sealdah railway station, where, due to well accessed location, occupancy rate is very high in this slum, though it is a Hindu dominated slum. Here 60percent hutments have occupancy rate of six persons per room. Generally in slum hutments, to accommodate more people in a lesser place, the height of the bed from the floor is quite high. It is just like upper and lower berth system of train compartment, where some of the family members sleep on the bed, others on the floor, rest beneath the cot.

X2-Housing condition-

In all the slums it is observed that hutments are generally semi-pucca in nature, where the wall and floor is pucca or concrete type and roof is kuchha in nature. Almost 60percent slum hutments are semi pucca in nature. In the slums of Pagladanga road 80 percent hutments are semi-pucca in nature. In some slum pockets vertical slums exist, where the buildings are pucca in nature.

X3- Ventilation of hutments

In most of the 'slum' density of hutments are high. There are also faulty arrangements of the hutments. So ,lack of ventilation in slum hutment is a common feature. Slum hutments which have lack of ventilation are high in Pagladanga road, Chamru Singh Lane and Baithak Khana Road. Density of hutments is very high in Baithak Khana Road. There are no proper windows in the rooms. So the rooms are also dark in day times. The situation is worst in Pagladanga road and Chamru Singh Lane. In Chamru Singh Lane, there are also vertical slums where not only rooms but also the stairs and long corridors are too dark at day time also.

b) Basic facilities in the slum-

X4- Sources of lighting

Electricity is the main source of lighting in all the slums. But there are some hutments also who don't have electric connection till date and they use kerosene as a source of light. In some hutments illegal electric connection also observed.

X5-Sources of drinking water

Water supplied by KMC either by pipe line or by water vehicle is the main source of drinking water. Water supply vehicle visit slums daily to supply water. But in some areas hand pump also used as a source of drinking water.

X6- Availability of water

Lack of easy access to safe water in sufficient amount is a criterion as laid down by UN-HABITAT expert group meeting (UN-HABITAT, 2003 b, p-18).lack of supply of water is observed everywhere in the study area. Slum dwellers are compelled to store water for drinking and daily usage purposes in sufficient amount within their premises. Water supply vehicle visit those areas two times daily. In slums of Pagladanga road water supply is inadequate as per dwellers opinion. In some of the slums like Baithak Khana road, where municipal pipe line is available, also get water two times daily. Long queue to collect water is very much common. Dwellers of Uttar Panchannagram slum faced the problem of water scarcity regularly, as the supply from water vehicles are infrequent there. They also have to carry water a long distance from the vehicle to their home.

X7- Type of toilet

Lack of access to adequate sanitation is one of the criteria to define slum, as determined by UN-HABITAT (2007).slum dwellers in the study area generally used '*sulav complex*' or common toilet. There is also private toilet in some slums. But in slum areas of Uttar Panchanna Gram 70 percent household have private toilet, though most of it is poor built by temporary material in nature. In slums of Pagladanga road, though there is a public toilet complex adjacent to the slum, but 40 percent hutments used nearby canal sides or open space or drains as toilet to avoid long queue in the public toilet.

X8- Kitchen facilities

As most of the slum dwelling families have only one room so they don't have any separate kitchen. The single room is used for all purpose including kitchen. But in some of the hutments there are corridors or small passage in front of their room which they used as kitchen. The results of this study reveals that, 50 percent of the slum hutments of Sasthitala road having separate space for kitchen but in slums of Pagladanga road only 5 percent hutments have separate kitchen.

X9- Medical facilities

Most of the slum dweller prefers Govt. Hospital for taking the purpose of delivery and other medical services. But in some areas there are also dependencies on traditional practitioner still date. For example the case of Pagladanga road, Chamru Singh Lane and Uttar Panchanna Gram may be stated, where literacy rate is also low.

c) **Demographic condition****X10-Migration-**

Slums in almost every city of the world originate as a residential area of the migrated peoples. The study area is not an exception. Though proportion of migrated people is different in every slum pockets, but they exist in all the slums. Percentage of migrated people is highest in the Uttar Panchanna Gram slum. Almost 90 percent of the slum dwelling families were migrated to this slum. In this area a number of slum hutments are occupied by refugees from Bangladesh, who came to India in 1947 and thereafter. There are also migrants from different parts of Bengal. Due to location near Sealdah railway station; proportion of migrated people is also high in the slum areas of Baithak Khana Road. But here the migrants are mainly from neighboring states of West Bengal as well as from the rural parts of Bengal.

X11- No of child per women

No of child per mother is higher in Muslim dominated slum like Belgachia, Chamru Singh Lane, and Baro Bagan slum. In Belgachia road and Baro Bagan slum area more than 40 percent mother have five or more children. In the slum area of Pagladanga road, the situation is also same though it is a Hindu dominated slum. In the above mentioned slum areas female literacy rates are low which acts as a determinant of high fertility rate.

d) **Environmental conditions-****X12-- Sewage disposal facilities and X13- Place of waste dumping**

Sewage disposal facility is poor in maximum households of Pagladanga road, Chamru Singh Lane, and Uttar Panchnagram. Generally in most of the slum households dump their waste in the vat or area fixed by KMC. But in some particular area KMC vehicle doesn't collect waste regularly. Lack of consciousness among dwellers of those areas is also a reason for waste dumping on roads and water bodies. In slums of Pagladanga road 80 percent households dump their wastes beside the nearby canal regularly. In Chamru Singh Lane and Uttar Panchanna Gram slum waste dumping in road is also observed. In the slum area of Paharpur road, dumping of waste in the nearest pond is in a threatening situation. The dwellers used the water of the pond for bathing, washing clothes and utensils and also dump a lot of waste materials in that particular pond.

e) **Economic condition-****X14- Ration card**

Ration card type is a significant indicator of QOL, because it helps to identify the people below poverty line. In the study area almost 60 percent households are below poverty line. The rate is quite high in the slum pockets of k.c.chatterjee street, Chamru Singh Lane, Paharpur road, where the bpl card holder families are 80 percent of the total household. There are also some families who don't have any ration card due to ignorance and other reasons like migration.

X15- Land ownership

On the basis of land ownership, the slums are also different in nature. Rented dwellers exist in almost every slums of KMC. But proportion of rented dwellers and rent of the hutments depends on the location of the slum. House rents are high in some slums like BaithakKhana road. Due to well accessed location, many families prefer to live here by paying high rents. 70percent of the surveyed families are rented dwellers in this slum. Their House rents are approximately rs. 2000-3000 per month. But the situation is different in slums like K.C.Street, Paharpur road, Hari Babu Pally and Baro Baganslum; where over 80percent of the slum dwellers lived in their own hutments.

X16-Fuel used for cooking

There are mainly three types of fuel used by the slum dwellers for cooking. LPG is very common in all the slums. But traditional chula is still now used by them. In the slums of K.C. ChatterjeeStreet, Pagladanga road, Uttar Panchanna Gram, almost 50percent household used traditional chula. Continuous price hike of LPG also forced dwellers to choose Chula as alternative option.

X17- Employment status

Overall employment rate is above 60 percent in almost every slum. This is because not only men, but also a huge number of female also earn for their family. Slums are mainly related to informal economy. So, most of the male works as daily labor, working as informal workers in different shops and markets, security guards, rickshaw puller, biriyani shop owner etc. Female members of the family also worked as daily labor, domestic servants etc. But the engagement of female in any occupation is very low in Muslim dominated slum, where the situation is opposite in Hindu dominated slum.

X18- Average monthly income

Income is one of the most important indicators of QOL. In the study area overall economic condition is poor in all the slum pockets. But there are also variations in monthly income. Households are divided here in three income groups. In the entire slum pockets maximum number of households belongs within the income limit from Rs. 4001-8000 per month. In Uttar Panchannagram and Baro Bagan slum 40percent household have monthly income below Rs. 4000 per month. The situation is worst in Pagladanga road where 75 percent households earn below Rs.4000 per month.

X19- Savings

Not only income, but savings is also an indicator of QOL. In the slum areas almost 70 percent people have bank account. Some have other savings like LIC, MIS etc. But there are also approximately 20percent household who don't have any type of savings.

X20- Consumption of food

As the economic condition of the dwellers is poor so they doesn't get proper food. The quality of life also reflected by the situation whether the slum dwellers consume food four times daily or not. It is observed from the study that the situation is better in Sasthitala road slum and M.B.Road slum where 70percent and 80percent household get food four times daily. But the situation is bad in Pagladanga road, where 50 percent household gets food one or two times daily. But the important feature which is necessary to mention, that quality and quantity of food is not sufficient in all the slum areas. In case of large families women doesn't get food properly. Most of the dwellers take their breakfast and evening snacks with tea and biscuit or puffed rice only. Children also do not get proper food. Tendency to eat fast food regularly is high among children.

X21- Household amenities

Though overall economic condition is poor in slums but there are also modern electronic gadgets in slum household. Dish tv, refrigerator, two wheeler, and smart phones taken into account to assess the QOL. Households are grouped whether they have any two of the above mentioned gadget, any one, or nothing. It is observed that in Sasthitala road almost 90percent household have any two assets. The situation is worst in Pagladanga road where 55 percent household doesn't have any asset.

f) **Status of education-****X22-Literacy of population**

Literacy rate is also taken as a parameter of QOL. In the study area literacy rate is high in Paharpur road and Baithak Khana Road, where literacy rate is over 80 percent. It is low in Pagladanga road (52 percent), Uttar Panchanna Gram (54percent) and Chamru Singh Lane (58percent). Poor economic conditions, religious barriers for female education, lack of awareness are the main constraints there.

X23- Female literacy

Female literacy rate is high in belgachia, Baithak Khana Road, M.B.Road and Paharpur road. The rate is above 70percent there. But it is low in Pagladanga road, Chamru Singh Lane, Uttar Panchanna Gram and Baro Bagan slum.

X24- Incidence of drop out

Dropout rate is high inPagladanga road, Chamru Singh Lane and Uttar Panchanna Gram slum. Incidence of drop out is highest in Pagladanga road, where 70 percent of the households have at least one drop out children. Very poor economic conditions, engagement of children's in work are the main causes of drop out in those areas.

g) **Condition of health-****X25-BMI of children-**

Body mass index (BMI) is an indicator of status of health as well as QOL of children. So BMI of children is used as a parameter. Body mass index is calculated using the formula- (weight in Kg./height in metersquare).From the study it is found that BMI of children is low in Chamru Singh Lane and Baithak Khana Road. Above 40 percent children there are suffered by low BMI.

X26- Child immunization-

Child immunization indicates health awareness among people. In slums of Chamru Singh Lane and Pagladanga road areas there are lacks of proper child immunization. Lower literacy rates, lack of awareness are main causes.

h) **Social problems****X27-Age of marriage**

Age of marriage of women is also taken as an indicator of QOL. It is observed that most of the women married after 18 years of their age. But in Chamru Singh Lane and Baro Bagan slum, child marriage also found. It is necessary to mention that female literacy rate is also very low in these two muslim dominated slums.

X28-Consumption of alcohol-

Alcoholism is a disease endemic to slums and it leads to moral and economic degradation. Many men like to consuming alcohol; this limits the amount of their income that can be spent for their family, and it leads to social diseases of domestic abuse as well as serious health problems (tabassum, 2011). Religious influence is observed in case of alcoholism. The tendency is almost nil in Muslim dominated slums like Chamru Singh Lane and Baro Bagan slum. But in other Hindu dominated slum a number of male consume alcohol occasionally. In slums of Pagladanga road almost 40 percentmale consume alcohol regularly.

X29- Children's engagement in work

Child labour is a social problem that exists in most of the slums. Due to poor economic condition childrens have to do work to earn money. Incidence of child labour is highest in Pagladanga road and Baro Bagan slum where the incidence is observed in 80percentand 55 percent household

respectively. There are also schools for these special working children. Rate of participation of children in work is also high Baithak Khana Road and Paharpur road slum. But in Sasthitala road, as the economic condition is relatively better, no child labour is observed.

B) Subjective parameter-

X30- satisfaction in slum environment-

To assess QOL, overall satisfaction of the people as a dweller of that particular slum is taken into account. It is observed that in K.C.Street, Sasthitala road, M.B.Road, and Paharpur road 75percent to 80percent people are satisfied with their present life. But the satisfaction level is very low in slums of Chamru Singh Lane. It is lowest in Pagladanga road and Uttar Panchanna Gram slum, where 90percent peoples are not satisfied with their present situation. In Pagladanga road, it is mainly due to lack of all facilities and poor economic condition, but in UttarPanchannagram slum, this may be due to the opinion of refugees from Bangladesh who are not at all satisfied with their present condition.

Results and discussions-

Though all the slums have poor socio-economic condition compared to urban society, but it is observed from the result of survey that the quality of life in slums of KMC has been grouped into four stages (Table-4).

1. The QOL is comparatively good in the slum pocket of Sasthitala road (Fig-2). physical and environmental condition is comparatively better in this slum. Literacy rate is 70 percent and female literacy rate is 68 percent. 84 percent children have normal BMI and rate of child immunization is 97percent. Due to availability of basic facilities, satisfaction levels among dwellers are comparatively high. So the slum achieved a better composite score.
2. Slums of K.C.Street, Belgachia, Baithak Khana Road, Paharpur road, M.B.Road and Baro Bagan have medium QOL. In spite of some common problems, there are also some specific problems in those slums which affect their QOL.
 - a. In the slum of K.C Street water supply is inadequate. Shortage of latrine is also a problem. 30 percent household use open spaces as latrines.
 - b. In slums of Belgachia road, 30 percent households have at least one drop out child. Childlabour is also observed here.
 - c. Occupancy rate is very high in Baithak Khana Road slum and lack of ventilation is also high.
 - d. Child labor and child marriage is also observed in the slum of Paharpur road. Water pollution is also a major problem in this slum. The pond in front of this slum becomes a waste dumping place to the dwellers instead they use the water of this pond for daily purpose.
 - e. Lack of water supply is also a common problem in the slum of M.B.Road. Unemployment, consumption of alcohol among males, poor economic condition makes their QOL medium.
3. QOL is poor in slum pockets of c. S. Lane and Uttar Panchanna Gram. Because-
 - a. As per the study, waste dumping facility is very poor in the slum of Chamru Singh Lane. Literacy rate (58 percent) and female literacy rate (48 percent) are very low. Rate of child labor is also comparatively high. 40 percent children are compelled to earn for their family. Rate of child immunization is comparatively low.
 - b. Lacks of water supply, shortage of latrines are also common problems in the slum of Uttar Panchanna Gram. Literacy rate is very low there which causes low QOL. Moreover, it is also mentioned earlier that, as most of the dwellers are migrated mainly from Bangladesh and they are not satisfied in their present condition, so satisfaction level is very low in this slum.

4. QOL is worst in the slum of Pagladanga road. Composite score is lowest there. Lack of toilet facilities, lack of drinking water, high occupancy rate, and poor economic condition make their daily struggle more difficult. It is observed that the poor dwellers are very much deprived of all facilities. Though there is a newly built public toilet, *anganwadi* School, school for child labors, etc. In the nearby areas of this slum but poverty, illiteracy and lack of consciousness among dwellers are the main constraint for their development.

From the above study, it is clear that though poor quality of life exists in all the slums of KMC but the situation is different in every slum pockets. Overcrowding, lack of sanitary system, inadequate water supply etc. is endemic almost in all the slums. But there are some specific social problems like child marriage, child labor, alcoholism, health related problem like low BMI of children, problem related to education like high rate of drop out etc. which are observed in some particular slum. The QOL is directly affected by all those factors, which are reflected in their composite scores. So, more micro-level planning is required for the proper improvement of the slums.

Suggestions for development –

The study raises important policy implications for the planners concerned with urban poverty, QOL in slums etc. Some critical measures that can be taken to improve the QOL of the slum dwellers are as follows-

It is necessary to increase water supply in the slum areas. In most of the study areas municipal water supply vehicles or pipe lines are the main source of water supply from which water is available at one or two times daily. So, the dwellers compelled to store water in their hutment premises. Water supply vehicles have irregular in their service. So more improved and sufficient water supply is required.

Sewage systems in different slums are in a pathetic condition. Drains are clogged and overflows in the road. In rainy season the problem becomes more serious. So, more improved sewage system with proper maintenance and awareness campaign to avoid use of plastics are suggested.

It is observed in the slums that shortage of latrine is a common problem in almost every slum. Though there are '*SulavComplex*' or common toilets in every slum but these are not sufficient. They have to stand in queue for latrines also. So, in some slums like K.C. Street, dwellers use open spaces for latrines. To solve the problem new toilets in sufficient number is suggested. As literacy rate is low in those areas, so more awareness campaign to use toilet is also suggested.

Child labors observed in different slums, though there are several acts and regulations to prevent child labor. Poor socio-economic condition, lack of consciousness, illiteracy etc. Are the causes behind this. So it is not possible to handle the problems only with prevention acts. Literacy, more opportunity for income to the dwellers, increasing consciousness through awareness campaign can solve the problem.

There are special schools for child labor in Baro bagan and Pagladanga road slum. Not only for literacy there are also scope for job oriented training like tailoring, fabric works etc. More development of these schools is suggested. There are also scopes to establish this type of schools in other slums like C.S.Lane where rate of child labor is also high.

It is essential to find out the drop outs and give them another chance to continue their study. Though this type of works already done by the government just theoretically by the name of '*SarvaSikhsha Mission*' but practically they are far away from their target. More concentration on school based data capture for drop out and detailed household survey in the slum areas is required to find out the actual number of drop outs.

The issues of slum cannot solve with forceful eviction or rehabilitation. It requires more sympathetic view of the policy makers for their proper development.

Conclusion-

Slums for their distinctive characteristics from the common urban society often termed as 'urban village'. Slums are most neglected part not only by the urban society but also by the policy makers. The policy makers treated slum only as a case of poverty. But neither poverty is only the single problem of slums, nor are all the slum dwellers poor. There are so many socio-economic issues which need proper attention. The most important matter is that every slum reflects a different social identity depending on the dwellers origin, religion, castes, languages etc. So, problems also vary from slum to slum. Though the common problems of poverty, lack of basic facilities can be solved with a common policy but it is not applicable to solve their separate problems. So micro-level planning is only the way for their improvement. On the basis of above mentioned suggestions, it can be said that not only government Initiative, but more active participation of different NGO's are also required. Moreover, increasing slum dwellers consciousness with the help of proper education can solve many problems and move slums towards a better Quality of Life.

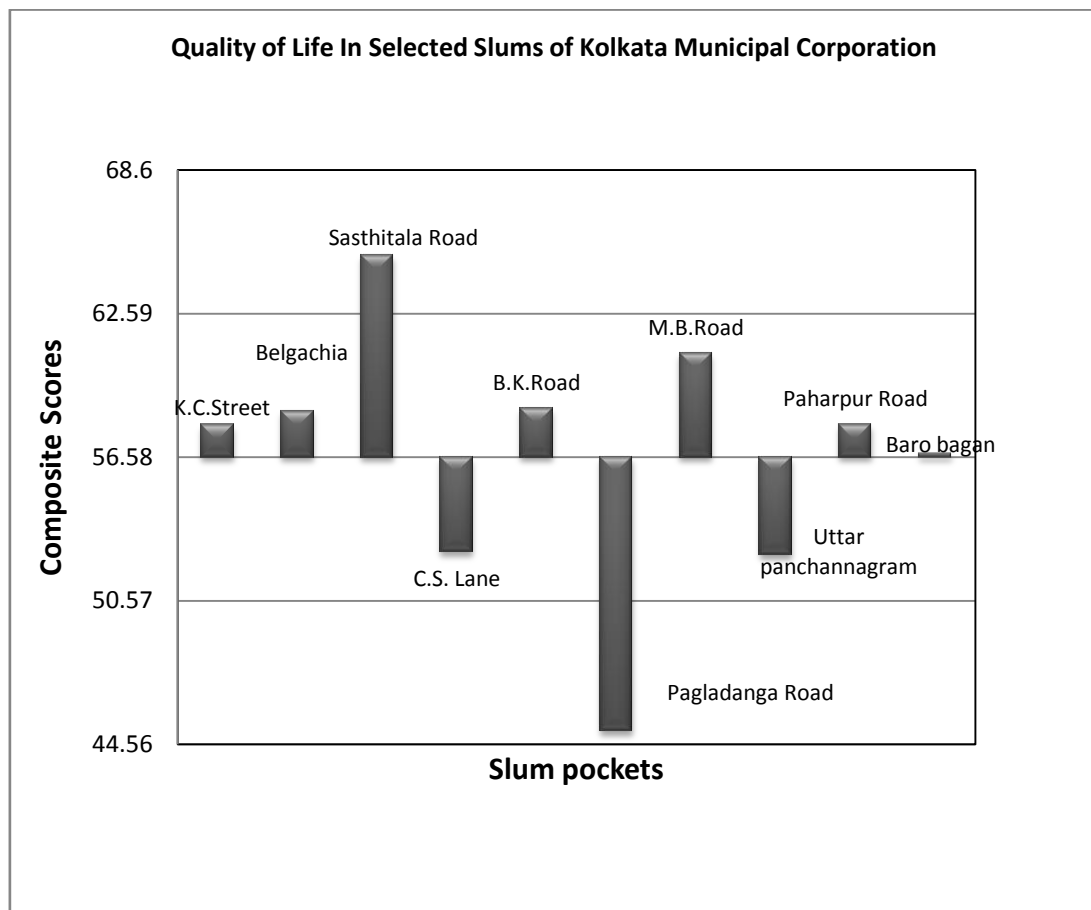


Figure-2- QOL in slums of KMC

Table:2-Selected variables for quality of life of slum dwellers of KolkataMunicipal Corporation and their x value

	Parameters	Indicators	Weightage Value	K. C. Street		Belgachia		Sasthitala Road		C.S.Lane		B. K. Road		Pagladanga Road		M.B.Road		Uttar Panchannagram		Paharpur Road		Baro Bagan, Metiaburuj		
				% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH	XValue	% OfHH
1	Physical conditions of slum	Occupancy rate	Upto 4	3	50	1.5	15	0.45	50	1.5	10	0.3	30	0.9	20	0.6	40	1.20	20	0.6	45	1.35	20	0.6
			5 to 6	2	10	0.2	35	0.7	40	0.8	20	0.6	10	0.2	20	0.4	40	0.8	20	0.4	30	0.6	20	0.4
			Above 6	1	40	0.4	50	0.5	10	0.1	70	0.4	60	0.6	60	0.6	20	0.2	60	0.6	25	0.25	60	0.6
2	Physical conditions of slum	Housing condition	Pucca	3	25	0.75	20	0.6	10	0.3	20	0.6	40	1.2	0	0	35	1.05	10	0.3	10	0.3	30	0.9
			Semi pucca	2	70	1.4	70	1.4	90	1.8	70	1.4	60	1.2	80	1.6	65	1.3	60	1.2	75	1.5	65	1.3
			Kuchha	1	5	0.05	10	0.1	0	0	10	0.1	0	0	20	0.2	0	0	30	0.3	15	0.15	5	0.05
3	Physical conditions of slum	Hutments are well ventilated	Yes	2	50	1	45	0.9	80	1.6	10	0.2	15	0.3	10	0.2	45	0.9	70	1.4	45	0.9	60	1.2
			No	1	50	0.5	55	0.55	20	0.2	90	0.9	85	0.85	90	0.9	55	0.55	30	0.3	55	0.55	40	0.4
4	Basic facilities in the slums	Sources of lighting	Electricity	3	85	0.85	100	3	100	3	80	2.4	100	3	60	1.8	100	3	50	1.5	100	3	65	1.95
			Kerosene	2	15	0.15	0	0	0	0	0	0	0	0	15	0.3	0	0	25	0.5	0	0	20	0.4
			Illegal	1	0	0	0	0	0	0	20	0.2	0	0	25	0.25	0	0	25	0.25	0	0	15	0.15
5	Basic facilities in the slums	Sources of drinking water	water supply	2	75	1.5	100	2	80	1.6	60	1.2	100	2	60	1.2	100	2	55	1.1	65	1.3	50	1
			Hand pump/well	1	25	0.25	0	0	20	0.2	40	0.4	0	0	40	0.4	0	0	45	0.45	35	0.35	50	0.5
6	Basic facilities in the slums	Availability of water	Adequate	2	40	0.8	60	1.2	90	1.8	25	0.5	35	0.7	0	0	25	0.5	10	0.2	35	0.7	60	1.2
			Inadequate	1	60	0.6	40	0.4	10	0.1	75	0.75	65	0.65	100	1	55	0.55	90	0.9	15	0.15	40	0.4

	Parameters	Indicators	Weightage Value	K. C. Street		Belgachia		Sasthitala Road		C.S.Lane		B. K. Road		Pagladanga Road		M.B.Road		Uttar Panchannagram		Paharpur Road		Baro Bagan, Metiaburuj		
				% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH
7	Type of toilet	Private	3	20	0.6	5	0.15	45	1.35	10	0.3	20	0.6	0	0	20	0.6	60	1.8	40	1.2	40	1.2	
		common	2	50	1	95	1.9	55	1.1	90	1.8	80	1.6	60	1.2	80	1.6	25	0.5	50	1	60	1.2	
		Open	1	30	0.3	0	0	0	0	0	0	0	0	40	0.4	0	0	15	0.15	10	0.1	0	0	
8	Kitchen facilities	Yes	2	40	0.8	45	0.9	50	1	10	0.2	5	0.1	5	0.1	35	0.7	30	0.6	20	0.4	30	0.6	
		No	1	60	0.6	55	0.55	50	0.5	90	0.9	95	0.95	95	0.95	65	0.65	60	0.6	80	0.8	70	0.7	
9	Medical facilities	Govt.	3	60	1.8	70	2.1	75	2.25	45	1.35	90	1.8	30	0.9	65	1.95	30	0.9	50	1.5	40	1.2	
		Private clinic	2	30	0.6	15	0.3	15	0.3	30	0.6	10	0.2	30	0.6	35	0.7	50	1	40	0.8	30	0.6	
		Traditional	1	10	0.1	10	0.1	10	0.1	25	0.25	0	0	40	0.4	0	0.00	20	0.2	10	0.1	30	0.3	
10	Demography	migrated	No	2	75	1.5	40	0.8	80	1.6	45	0.9	30	0.6	20	0.4	40	0.8	10	0.2	65	1.30	50	1
			Yes	1	25	0.25	60	0.6	20	0.2	55	0.55	70	0.7	80	0.8	60	0.6	90	0.9	35	0.35	50	0.5
11	Demography	No of child per women	Upto 2	3	70	2.1	30	0.9	70	2.1	15	0.45	60	1.8	10	0.3	60	1.8	40	1.2	45	1.35	20	0.6
			3 to 4	2	30	0.6	25	0.5	30	0.6	65	1.3	40	0.8	60	1.2	40	0.8	40	0.8	40	0.8	40	0.8
			5 and above	1	0	0	45	0.45	0	0	20	0.2	0	0	30	0.3	0	0	20	0.2	15	0.15	40	0.4
12	Environmental	Sewage disposal	Average	2	55	1.1	70	1.4	90	1.8	30	0.6	60	1.2	10	0.2	90	1.8	40	0.8	60	1.2	60	1.2
			Poor	1	45	0.45	30	0.3	10	0.1	70	0.7	40	0.4	90	0.9	10	0.10	60	0.6	40	0.4	40	0.4
13	Environmental	Place of waste dumping	Area fixed by municipality	3	85	2.55	55	1.65	80	2.4	40	1.2	90	2.7	5	0.15	90	2.7	30	0.9	25	0.75	65	1.95
			On roads	2	15	0.3	45	0.9	20	0.4	60	1.2	10	0.2	15	0.3	10	0.2	60	1.2	15	0.3	35	0.7

	Parameters	Indicators	Weightage Value	K. C. Street		Belgachia		Sasthitala Road		C.S.Lane		B. K. Road		Pagladanga Road		M.B.Road		Uttar Panchannagram		Paharpur Road		Baro Bagan, Metiaburuj	
				% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value
		Near water bodies	1	0	0	0	0	0	0	0	0	0	0	80	0.8	0	0	10	0.1	55	0.55	0	0
14	Ration card	APL	3	15	0.45	25	0.75	50	1.5	10	0.3	45	1.35	5	0.15	35	1.05	10	0.3	20	0.6	10	0.3
		BPL	2	80	1.6	75	1.5	50	1	80	1.6	55	1.1	75	1.5	65	1.3	65	1.3	80	1.6	70	1.4
		Without card	1	5	0.05	0	0	0	0	10	0.1	0	0	20	0.2	0	0	25	0.25	0	0	20	0.2
15	Land ownership	Own	2	90	1.8	60	1.2	80	1.6	55	1.1	30	0.6	55	1.1	45	0.9	55	1.1	90	1.8	70	1.4
		Rental	1	10	0.1	40	0.4	20	0.2	45	0.45	70	0.7	45	0.45	55	0.55	45	0.45	10	0.1	30	0.3
16	Fuel used for cooking	LPG	3	25	0.75	45	1.35	70	2.1	30	0.9	45	1.35	25	0.75	50	1.5	30	0.9	45	1.35	45	1.35
		Kerosene	2	25	0.5	10	0.2	20	0.4	40	0.8	40	0.8	25	0.5	40	0.8	20	0.4	25	0.5	35	0.7
		Traditional Chula	1	50	0.5	45	0.45	10	0.1	30	0.3	15	0.15	50	0.5	10	0.1	50	0.5	30	0.3	20	0.2
17	Employment status (% of population)	Employed	2	55	1.1	74	1.48	75	1.5	65	1.3	85	1.7	45	0.9	68	1.36	65	1.3	65	1.3	62	1.24
		Unemployed	1	45	0.45	26	0.26	25	0.25	35	0.35	15	0.15	55	0.55	32	0.32	35	0.35	35	0.35	38	0.38
18	Average monthly income	10001 and above	3	40	1.2	30	0.9	40	1.2	25	0.75	30	0.9	0	0	40	1.20	20	0.6	35	1.05	30	0.9
		5001-10000	2	40	0.8	55	1.1	45	0.9	50	1	55	1.1	25	0.5	35	0.7	40	0.8	50	1	30	0.6
		5000 and below	1	20	0.2	15	0.15	15	0.15	25	0.2	15	0.15	75	0.7	25	0.25	40	0.4	15	0.15	40	0.4

	Parameters	Indicators	Weightage Value	K. C. Street		Belgachia		Sasthitala Road		C.S.Lane		B. K. Road		Pagladanga Road		M.B.Road		Uttar Panchannagram		Paharpur Road		Baro Bagan, Metiaburuj		
				% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH
		below							5		5				5									
19	Savings/ bank account	Yes	2	80	1.6	70	1.4	75	1.5	55	1.1	90	1.8	10	0.2	85	1.7	60	1.2	80	1.6	90	1.8	
		No	1	20	0.2	30	0.3	25	0.25	45	0.25	10	0.1	90	0.9	15	0.15	40	0.4	20	0.2	10	0.1	
20	Consumption of food	Four times daily or more	3	60	1.8	30	0.9	80	2.4	45	1.35	45	1.35	15	0.45	80	2.40	30	0.9	40	1.2	65	1.95	
		Three times	2	35	0.7	45	0.9	20	0.4	40	0.8	55	1.1	35	0.7	20	0.4	30	0.6	50	1	25	0.5	
		Two times	1	5	0.05	25	0.25	0	0	15	0.15	0	0	50	0.5	0	0.00	40	0.4	10	0.1	10	0.1	
21	Household amenities	Any two	3	40	1.2	50	1.5	90	2.7	15	0.45	25	0.75	5	0.15	60	1.80	30	0.9	35	1.05	30	0.9	
		Any one	2	55	1.1	50	1	10	0.2	75	1.5	75	1.5	40	0.8	40	0.80	50	1	65	1.3	70	1.4	
		Nothing	1	5	0.05	0	0	0	0	10	0.1	0	0	55	0.55	0	0	20	0.2	0	0	0	0	
22	Literacy (%)	Literate	2	78	1.56	75	1.5	70	1.4	58	1.16	80	1.6	52	1.04	76	1.52	54	1.08	82	1.64	72	1.44	
		Illiterate	1	22	0.22	25	0.25	30	0.3	42	0.42	20	0.2	48	0.48	24	0.24	46	0.46	18	0.18	28	0.28	
23	Female literacy (%)	Literate	2	60	1.2	75	1.5	68	1.36	48	0.96	78	1.56	45	0.9	72	1.44	55	1.1	75	1.5	54	1.08	
		Illiterate	1	40	0.4	25	0.25	32	0.32	52	0.52	22	0.22	55	0.55	28	0.28	45	0.45	25	0.25	46	0.46	
24	Incidence drop out	No	2	95	1.9	70	1.4	100	2	45	0.9	80	1.6	30	0.6	90	0.9	60	1.2	85	1.7	75	1.5	
		Yes	1	5	0.05	30	0.3	0	0	55	0.55	20	0.2	70	0.7	10	0.10	40	0.4	15	0.15	15	0.15	
25	alt	BMI of	High	3	16.	0.49	13.88	0.41	15.5	0.4	6.7	0.2	16.	0.49	13.	0.3	18.	0.56	10.	0.32	5.2	0.15	18.5	0.55

	Parameters	Indicators	Weightage Value	K. C. Street		Belgachia		Sasthitala Road		C.S.Lane		B. K. Road		Pagladanga Road		M.B.Road		Uttar Panchannagram		Paharpur Road		Baro Bagan, Metiaburuj	
				% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value	% Of HH	X Value
26	children			66				5	6	5		66		15	9	75		71		6		7	
		Moderate	2	58.33	1.16	51.38	1.02	62.22	1.24	47.29	0.94	41.66	0.83	55.26	1.1	52.08	1.04	53.57	1.07	56.14	1.12	45.71	0.91
		Low	1	25	0.25	34.72	0.34	22.22	0.22	45.94	0.45	41.66	0.41	31.57	0.31	29.16	0.29	35.71	0.35	38.59	0.38	35.71	0.35
	Child immunization	Yes	2	93	1.86	90	1.8	97	1.94	74	1.48	100	2	81	1.62	91	1.82	91	1.82	96	1.92	85	1.7
		No	1	7	0.07	10	0.1	3	0.03	26	0.26	0	0	19	0.19	9	0.09	9	0.09	4	0.04	15	0.15
27	Age of marriage (% of married women)	Above 18 years	2	95	1.9	80	1.6	95	1.9	60	1.2	85	1.7	60	1.2	90	1.8	70	1.4	75	1.5	60	1.2
		Below 18 years	1	5	0.05	20	0.2	5	0.5	40	0.4	15	0.15	40	0.4	10	0.1	30	0.3	25	0.25	40	0.4
28	Consumption of alcohol (% of male)	Never	3	45	1.35	95	2.85	80	2.4	100	3	75	2.25	20	0.6	75	2.25	75	2.25	85	2.55	100	3
		Occasionally	2	50	1	5	0.1	20	0.4	0	0	15	0.3	40	0.8	15	0.30	15	0.3	10	0.2	0	0
		Regularly	1	5	0.05	0	0	0	0	0	0	10	0.1	40	0.4	10	0.10	10	0.1	5	0.05	0	0
29	Children's engagement in work	No	2	95	1.9	90	1.8	100	2	60	1.2	90	1.8	20	0.4	95	1.9	80	1.6	70	1.4	45	0.9
		Yes	1	5	0.05	10	0.1	0	0	40	0.4	10	0.1	80	0.8	5	0.05	20	0.2	30	0.3	55	0.55
30	satisfied in slum	Yes	2	65	1.3	70	1.4	85	1.7	25	0.5	20	0.4	10	0.2	80	1.6	10	0.2	75	1.5	60	1.2
		No	1	35	0.35	30	0.3	15	0.15	75	0.75	80	0.8	90	0.9	20	0.2	90	0.9	25	0.25	40	0.4

Source: Field survey, 2019

Table 3: Composite scores of selected slums of KMC-

Para Meters	Name of the slums									
	K.C. street	Bel Gachhi a	Sasthi tala road	C.S. Lane	B.K road	M.B.R oad	Uttar panchann a Gram	Paharp ur road	Pagla danga road	Baro Bagan
X1	2.1	1.65	2.4	1.3	1.7	2.20	1.6	2.2	1.6	1.6
X2	2.2	2.1	2.1	2.1	2.4	2.35	1.8	1.95	1.8	2.25
X3	1.75	1.4	1.8	1.45	1.3	1.4	1.1	1.65	1.2	1.5
X4	1.9	1.6	1.8	1.55	1.3	1.45	1.55	1.9	1.55	1.7
X5	2.1	2.25	2.5	2	2.45	2.35	1.85	2.2	1.85	1.9
X6	1	3	3	2.6	3	3	2.25	3	2.35	2.5
X7	1.75	2	2.6	2	2.3	2.4	1.8	2.15	1.75	2.25
X8	1.9	2.05	2.45	2.1	2.2	2.2	2.45	2.3	1.6	2.4
X9	1.75	2	1.8	1.6	2	2	1.55	1.65	1.7	1.5
X10	1.4	1.6	1.9	1.25	1.35	1.05	1.1	0.85	1	1.6
X11	2.7	1.85	2.7	1.95	2.6	2.6	2.2	2.3	1.8	1.8
X12	2.5	2.5	2.65	2.2	2	2.65	2.1	2.4	1.9	2.1
X13	1.95	1.8	2.4	1.6	1.85	1.9	1.7	1.75	1.6	1.6
X14	1.55	1.74	1.75	1.65	1.85	1.68	1.65	1.65	1.45	1.62
X15	2.2	2.15	2.25	2	2.15	2.15	1.80	2.20	1.25	1.90
X16	1.8	1.7	1.75	1.35	1.9	1.85	1.6	1.8	1.1	1.9
X17	2.55	2.05	2.8	2.3	2.45	2.80	1.9	2.3	1.65	2.55
X18	2.35	2.5	2.9	2.05	2.25	2.60	2.1	2.35	1.5	2.3
X19	1.78	1.75	1.7	1.58	1.8	1.76	1.54	1.82	1.52	1.72
X20	1.6	1.75	1.68	1.48	1.78	1.72	1.55	1.75	1.45	1.54
X21	1.95	1.7	2	1.45	1.8	1	1.6	1.85	1.3	1.65
X22	1.5	1.45	1.8	1.1	1.15	1.45	1.7	1.45	1.1	1.6
X23	1.55	1.7	1.9	1.3	1.6	1.9	1.4	1.8	1.1	1.6
X24	2.85	2.55	2.8	2.4	2.9	2.9	2.2	1.6	1.25	2.65
X25	2.4	2.95	2.8	3	2.65	2.65	2.65	2.8	1.8	3
X26	1.9	1.77	1.92	1.59	1.73	1.89	1.74	1.65	1.8	1.81
X27	1.95	1.9	2	1.6	1.9	1.95	1.8	1.7	1.2	1.45
X28	1.65	1.7	1.85	1.25	1.2	1.8	1.1	1.75	1.1	1.6
X29	1.4	1.45	1.05	1.1	1.05	1.35	1.2	1.2	1.05	1.3
X30	1.93	1.9	1.97	1.74	2	1.91	1.91	1.96	1.81	1.85
Σx	57.91	58.51	65.02	52.64	58.61	60.91	52.49	57.93	45.13	56.74
(x-x)	4.43	5.03	11.54	-0.84	5.13	7.43	-0.99	4.45	-8.35	3.26
(x-x) ²	19.62	25.30	133.1	0.705	26.31	55.20	0.98	19.80	69.72	10.6
Mean(\bar{x})=56.58 and Standard Deviation=6.01										

Table-4: Levels of QOL in slums of KMC-

Levels of quality of life	Statistical value	Composite score	Name of slums
Good	Mean+SD to mean+2SD	62.59-68.6	Sasthitala road,
Medium	Mean to mean+SD	56.58-62.59	K.C.Street,Belgachia,Baithakkhana road,M.B.Road, Paharpur road, Baro Bagan bustee
Poor	Mean-SD to mean	50.57-56.58	Chamru Singh Lane, Uttar Panchannagram
Very poor	Mean-SD to mean-2SD	44.56-50.57	Pagladanga road

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