

# “An Assessment of ‘Quality of Life Index’ and Planning Proposal for Slum Upgradation: A Case Study of South Zone, Surat City”

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**Abstract** - Exercise of the upgradation of slum dwellers is carried out with a view to improve the quality of life of economically poor citizens of the society. The aim of study is to determine the quality of life in slums of Surat city. For determining the quality of life in slums Calvert Henderson and Mercer’s Quality of life Index mathematical model has been used. The Calvert-Henderson Quality of Life Indicators were education, economy, energy, environment, health, human, transportation, income, infrastructure, national security, public safety, recreation and shelter used for detail analysis. The study will include to analyses and provide proper housing and overcome poverty and vulnerability of the urban poor, because their participation has been one of the most important instruments in sustaining positive change in their living conditions. The analysis further provides an outline of recommendations to be taken into consideration in designing a programmed or a project.

**Key Words:** Slum, Urbanization, migration, quality of life, slum upgradation

## 1. Introduction

Urbanization has become a universal phenomenon as a consequence of rapid industrialization. Though towns and cities existed since the dawn of civilization, their rapid growth started only after Industrial Revolution. Industrial activity in urban areas has set up a tremendous magnetic pull to the rural population to the urban centers. This has resulted in continuous migration of rural population into cities in search of employment opportunities and better living conditions. Increase in urban population has its effect on towns and cities.

Today, the word ‘slum’ is broadly used to describe poverty housing arrangements all over the world. In colonial times the word implied a class division based on a person’s residency, now terms such as slum, shanty, informal housing, etc. are used interchangeably by authorities engaged in development activities that relate to urbanization.

- ⇒ Sufficient living space which means not more than three people sharing the same room.
- ⇒ Easy access to safe water in sufficient amounts at an affordable price.

- ⇒ Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.
- ⇒ Security of tenure that prevents forced evictions.

## Objectives of study

1. To examine existing scenario of Slums, South Zone, Surat City
2. To generate Quality of life Index for South Zone, Surat City
3. To Prepare strategic planning proposals for improving the Quality of life of slums, South Zone, Surat City

## Scope of work

- Scope of the study is limited to assess the quality-of-life index within the South zone, Surat city having an area of 59.0024 Sq.km.
- The focus of study is limited to analysis of slum having high population.

## 2. Study area

Surat, the second largest city of Gujarat and 9th largest city of India, with a population of approximately 4.4 million, is spread over 326.51 sq kms on either side of the river Tapti. Surat is the city, facing enormous pressures of urbanization (decadal growth rate more than 60%). The concentration and growth of the textile and the diamond industry in and around. I have selected 3 group of slums with different characteristics for my quality-of-life analysis.



Figure 1: Selected slums

In Surat Municipal Corporation there are seven zones from which South zone consist maximum number of slum. South zone Contains maximum industries in Surat city. The South zone has a large industrial area managed by Gujarat Industrial Development Corporation (GIDC), SurSEZ (Surat Special Economic Zone), Diamond SEZ and many other private SEZs.

Surat Municipal Corporation Slum Upgradation Department						
Zonewise Summary of Slums						
Sr. no.	Zone	No. of Slums	Area of Slums (in sqmt)	No. of HHs	No. of beneficiaries	Population Density (Person/Sqmt)
1	Central	16	98492.5	1888	9440	0.10
2	East	54	347432	12949	64745	0.19
3	North	40	238690	5810	29050	0.12
3	South	104	818060	17249	96910	0.12
4	South East	54	1161414	23697	118485	0.10
5	South West	28	250055	7340	36700	0.15
6	West	38	889829	5460	27300	0.03
	<b>Total</b>	<b>334</b>	<b>3803972.5</b>	<b>74393</b>	<b>382630</b>	<b>0.10</b>

Figure 2: Population of south zone

### 3. Literature Review

QOL is a complex domain which gives image of present condition of life. As a town planner, it is very important to arrange cities into efficient manner and for that need to evaluate current conditions and provide or formulate measures to manage and implement. Planner need to focus on every attribute which lead to better QOL. There are some assignments that need to fulfil by planner like national planning, regional planning, urban planning, research education, real estate development, advice and arbitration. By assessing QOLI, planner can frame and implement inclusive policy, regulations and rule at central, state and local level so that future development can take place in unvarying manners.

The main purpose of QOLI is to provide tool for community development which can be used to monitor key indicators that encompass the social, health, environmental and economic dimensions of QOL in community.

There are two approach of QOL.

1. Quantitative approach (objective evaluation)  
Objective evaluation is concern about collection, recording and make relation of the data with environment, economy, social and other indicators. An objective indicator means number of houses, quality of material, demographics etc.
2. Qualitative approach (subjective evaluation)  
Subjective evaluation of QOL concern with feeling, opinion and belief of individual or group and satisfaction level can be derived. Subjective measurements are focus in personal report on life experience. Subjective measures are important part of QOL but to determine this measure objective indicator are requiring to survey.

### 4. Determination of Index

This mathematical method developed by Kenneth E. Hornback, adopted for QOLI assessment. QOLI is a combination of two components i.e. Subjective and Objective. Both components are calculated in different ways with different formulas, and then both components relate to each other with the help of a co-efficient named Spearman correlation co-efficient. Steps of determination of QOLI are also discussed below.

To recapitulate, four specific inputs to our functional relationship for the QOL are proposed for each QOL factor (j) and each individual in the sample population(i).

- ⇒ Oij – the objective measure of the factor for each individual, normalized to a 1-10 scale.
- ⇒ Sij – The subjective, or satisfaction measure of the same factor for the same individual, also normalized to a 1-10 scale.
- ⇒ rj – The correlation between Oij and Sij for the entire population.
- ⇒ Wij – The important weighting which the individual attaches to the particular factor, relative to all other factors, on a rank order scale.

### 5. Parameters of Quality of Life

- 1) Environmental components
- 2) Health components
- 3) Economic components
- 4) Social components
- 5) Transportation
- 6) Housing
- 7) Educational components
- 8) Infrastructure components

### 6. Methodology

The methodology framework adopted for this research work is having following different steps as discussed. There is a prime importance and interesting that to find out corrected and correlated study topic with very specific individual interest based on motivation. By referring city level study, study area was identified. Then frame aim, objective and scope based on motivation and study area selection. Then literature review prepared based on study related to QOL subject referring to research papers of journals, books, development plans, government schemes/ project, report, article/ magazines, conference proceeding are taken as a reference. Then next step is data collection. There are two types of data such as primary data and secondary data. Secondary data is collected by refer government report, Surat municipal corporation and census website or past research. Primary data is collected by field survey. A questionnaire is prepared and for validation of

questionnaires pilot survey is done. Expert opinion also takes part in and helpful to dissertation work. Then analysis of collected data is done by statistical analysis. After analysis calculate QoL score. Doing all this thing in well manner and conduct various test, identify issue in study area. To overcome or minimize those issue powerful proposal is prepared for future positive progress. After that recommendation is derived from concluding remark. After that, limitation of study and future scope derived.

### 7. Data Collection and analysis

Sample sizes decide on the basis of population and also area. 267 samples are selected for Surat city and divided the city into ten different study areas (slums) so as 25 samples are to be taken for each study area. Analysis is done with the help of the Microsoft Excel Programmed, and XLSTAT software to find AHP Matrix and weightage factor for all parameters. Find out the QoL index for 10 study areas. On the basis of analysis, found a weakest parameter as well as what is the public demand to improve which parameters initially.

The questionnaire was developed to analyse the ward level situation. It is made up of 3 sections i.e. Socio-Economic Profile, questions related to pre-established attributes and citizen's perception for improvement and ranking various parameter as per them priorities. To assess the Environmental condition, Transportation facilities, housing condition, Health facilities, Educational facility, condition of building, Work Satisfaction of people. To assess the condition of physical infrastructure attributes like Road and Transport, Water supply, Strom Drainage, Drainage system, Social infrastructures, and public spaces were considered. Satisfactory level of residents, duration of present stay and willingness to move from present location was recorded. Quality of life is a multi-dimensional concept that is to be measured with the help of a composite index which is able to assess the quality of life in a city. Quality of life index measured at regular interval can assess the trends in quality of life and thus be helpful in directing the policy decisions. The survey results clearly indicate that the people of Surat view mass transportation service as the worst in the city.

### 8. Result Analysis

In this study, an attempt has been made to evaluate the "Quality of Life Index" for Surat city, by making use of the mathematical model developed by Kenneth E Hornback and others. The value of the index is measured on a scale normalized to 1-10. The value of index nearer to 10 indicates an excellent QoL, whereas the value nearer to 1 indicates the worst QoL. In this way, the QoLI for all study areas has been evaluated as shown in Table 1.

Table 1: QOL Index

Sr. No.	Area	QOL Index
1	Ashok Samrat Nagar	5.73

2	Morarji Nagar Vasahat	5.30
3	Ramdev Nagar	5.44
4	Shanidev Nagar	4.83
5	Vikas Colony	5.02
6	Dr.Hegde Vasahat-1	3.82
7	Dr.Hegde Vasahat-1	3.93
8	Dr.Hegde Vasahat-1	4.69
9	Prem Nagar Bhedvad	3.70
10	Bhedwad Dargah	5.20

Factors having poor satisfaction: Housing, Solid waste, Drainage, this factor play a major role in bringing down QoLI. Factors having medium satisfaction : Water Quality, Cleanliness, Street light, Electricity, Safety these factors play an ordinary role in bringing down QoLI. Factors having comparatively better satisfaction : Health and Fire Services, Education, Transport were found to be better compared to above mentioned factors and hence have low impact on index to decrease QoLI.

### 9. Urban Planning Proposals

Urban Planning proposal is to be given for the weakest parameter of different slums. But here urban planning proposals are given as per public demand and according to Building Bylaws. All physical and social infrastructures are according to the needs of the people and Building Bylaws. Accordingly given three urban planning proposals are Housing, Solid Waste Management, Fire Services and Strom Water Proposals are given for long term (25 Years).

#### 1.Environmental

Waste management should primarily be focused at household level for sustainability and price effectiveness. Certain elements which can't be managed at the household level should be managed at the community level. All sections of slum households should have equal access to safe disposal of waste water and solid waste management.

#### 2,Health

Health monitoring program arranged by government. Increase the efficiency of public services like water network, drainage network, solid waste network and storm water network. Health improvement plan generate by government who assign work for health program. Strategic planning model for disease control and prevention for all local health departments under taking public health infrastructure development, and community health planning.

#### 3.Social

- Improvement of CCTV camera surveillance
- visibility and natural surveillance – places where activities can be easily seen deter potential offenders

- access, movement and sightlines – crime is less likely to occur in places where there are clear, well defined routes and people can easily enter and leave
- activity – maximising the use of public places by a mix of people encourages social interaction and cohesion, increases visibility and surveillance by passers-by and reduces the risk of crime
- ownership – places that generate a sense of ownership among users discourage crime. This is best achieved by creating partnerships within the community and coordinating shared activities and programs
- maintenance – public places that are well managed and maintained generally feel safer and encourage people to use them. This in turn encourages activity and natural surveillance

#### 4. Education

Most important, by increasing education level among population will definitely help to improve QOL. Education for all following scheme should be reform for providing basic education to all section of society: Education for all city dwellers, Subsidies for tuition fees, Madhyam Bhojan scheme, 10 % seat reservation in good school, Girls free education scheme, Training centers for woman, Formation of NGO organization, City level infrastructure development, As per TCPO norms employ teachers ration per students, Min. wages for vidhya sahayak.

#### 5. Transportation

- provide Smart parking place at various place to reduce parking and traffic congestion on road.
- Provision of “ No Vehicle Zone” in market street during peak hours.
- Development of public Bicycle sharing cycle system.

#### 6. Housing Facility

Housing condition is worst in selected area. It is required to provide improvement of existing condition. With bad ventilation and risky condition people may risk their life in that housing. “In-situ” slum rehabilitation using land as a resource with private participation for providing houses to eligible slum dwellers is an important component of the “Pradhan Mantri Awas Yojana (Urban) – Housing for All” mission. This approach aims to leverage the locked potential of land under slums to provide houses to the eligible slum dwellers bringing them into the formal urban settlement.

#### 7. Infrastructure

- Infrastructure condition can directly affect the QOL of slums. Surat municipality and Slum Upgradation cell develop intensive and qualitatively various networks like, drainage, storm water, communication, electricity, fire safety, traffic and energy distribution Network. These can be developed by adopting future approach.
- Regular maintenance of roads, drains, lights, public spaces and several other infrastructure facilities.

- Install solar roof top system to all over public building in city area also increasing street light with LED and solar panels.
- Development of pipeline for household GAS connection.

### 10. CONCLUSION

Quality of life is a very comprehensive concept that is enhanced by increasing the level of public satisfaction with the services provided by the government. In urban areas, QOL has been a major concern for researchers in this area. The main objective of this study was to find out the level of various parameters and the quality of life of slums. In this study to use of all data the comparisons between population and factors. The combination of industrial area and urban area is to make south zone of surat as more interesting city for study of quality of life. South zone is the major industrial capital area in city. This study has indicated that the QOL Index for Ashok smart nagar having highest rank and Prem nagar is having lowest rank among the all slums. Factors having poor satisfaction: Housing, Solid waste, Drainage, this factor play a major role in bringing down QoLI. Factors having medium satisfaction : Water Quality, Cleanliness, Street light, Electricity, Safety these factors play an ordinary role in bringing down QoLI. Factors having comparatively better satisfaction : Health and Fire Services, Education, Transport were found to be better compared to above mentioned factors and hence have low impact on index to decrease QoLI. The industrialization and related urbanization are therefore not the indicator of improvement in the living conditions of the people. It is therefore desirable to use the QOL. An Assessment of ‘Quality of Life Index’ For slums in Surat city. QOL index of the slum dwellers as a tool to guide the development and in preparation of the slum upgradation plan.

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