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Ward-Level Disparities And Determinants Of Slum Quality Of Life In Egra Municipality, West Bengal
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Abstract
The word 'Slum' refers to a densely or heavily populated area in a city. The proliferation and advancement of slums in urban regions is a significant concern for urban local bodies (ULBs). Nearly one billion individuals reside in slums globally, characterized by overcrowding, pollution, and a deficiency of essential utilities. The current situation is exceedingly dire in developing nations such as India. Slums are a critical part of the cities, and most of the slum dwellers belong to or are near poverty. The study aims to assess the quality of life of slum dwellers in Egra Municipality, West Bengal, by analyzing ward-level disparities and identifying the key social, economic, and environmental factors that influence their wellbeing. Primary and secondary data were used to fulfill the objectives. In Egra, municipal authorities estimate that there are 2136 total households in twenty-eight slums. The sample size is 423. Here, the authors used Yamane's formula for sample size. Normalized index, Composite index, and standard deviation techniques have been applied to determine the Quality of life of slum people. Eight variables such as Illiterate population(X1), economy(X2), access to drinking water(X4), Security of land tenure(X4), types of houses(X5), water logging(X6), types of roads(X7), and toilet facilities(X8), have been analyzed, and GIS techniques have been used for cartographic presentation. The Quality of Life in the slums of Egra municipality they are not at a satisfactory level. The primary survey findings indicate that most Slum households in Egra municipalities are lacking in Housing Conditions, Infrastructure, Sanitation, Health, and Healthcare. In the present time, social wellbeing, social Concerns, and quality of life are the new spaces of geographical examination. Finally, there were several recommendations for inclusive development and the enhancement of quality of life in slums improvement.
Keywords: *Urbanization, Slum growth, Quality of Life, Development, Composite Index.*

1. INTRODUCTION:

The developmental process significantly impacts urbanization. The world's urbanization has risen from 30 percent to 50 percent between 1950 and 2010.Urban centres with populations exceeding one million are experiencing significant strain from population influx compared to prior decades (McDonnel et al.,2008: Nageswara Rao and Narendra, 2006).One of the major global concerns of the twenty-first century is rapid urbanization, which has led to substantial economic growth and infrastructure expansion, particularly in developing nations such as India (Birch & Wachter, 2011).Quality of life is a multidimensional concept or aspect of an individual or a society (Mendes, J. F. 2000), & Hirschberg et al. (2001). Quality of Life (QoL) is a broad term used to describe a society's overall level of wellbeing. The term "Quality of Life" (QoL) was introduced after World War II, and its conceptualization has evolved in tandem with the rapid expansion of urbanization and globalization (Farquhar, 1995). The Quality of Life (QoL) significantly influences the advancement of both the macroeconomic and local economies. An enhanced quality of life can attract foreign investments and a skilled workforce (Chen, S., 2015). Morris (1979) works on Physical Quality of Life Index (PQLI). He has taken three components, such as basic literacy, life expectancy, and infant mortality. Today, the PQLI concept has shifted to the HDI (Human Development Index) and is classified under economic perspectives to quality of life (Sirgy et al., 2006). A

slum, as described by the United Nations' UN-HABITAT organization, is a dilapidated urban area characterized by inadequate housing, unsanitary conditions, and a lack of tenure security.
The United Nations reports that the proportion of urban residents residing in slums decreased from 47 percent to 37 percent in emerging countries between 1990 and 2005. Nevertheless, the burgeoning population is contributing to the escalation of slum populations. Globally, one billion individuals reside in slums, a figure projected to double to two billion by 2030.The harmful impact of urbanization has been portrayed by slum inhabitants facing housing deficiency, basic insufficiencies in public utilities, overcrowding, and unhygienic conditions, among others. Presently, slum management at Egra municipality is a most important issue for the Egra Urban Local Body (EULB). Despite several studies on slum quality of life, there is a lack of comprehensive, ward-level analyses that integrate both socioeconomic and environmental determinants using geospatial techniques in smaller municipalities like Egra. Most research focuses on larger urban centers, leaving gaps in understanding disparities within smaller towns. Limited attention has been given to how land tenure security and infrastructural variables interact to shape quality of life at the micro-level. The slum population has increased rapidly due to massive urbanization. Therefore, improving the Quality of life for slum dwellers is an important issue for Egra municipality. This study aims to assess the current quality of life of slum dwellers in Egra municipality in relation to various social, economic, and Environmental factors. This work also asses the slum quality of life (Ward wise) statistically of Egra municipality and propose some measures to progress Quality of life in slums. The primary motivation of the research is to analyze the status of Quality of life and ward-level disparities among slum dwellers. Here, it also attempted to identify the influencing factors affecting the quality of life of slum dwellers.

2. MATERIALS AND METHODS:

2.1 **Study Area:**

Purba Medinipur district includes 25 blocks and five municipalities, and these municipalities are tamralipta, Haldia, Egra, Contai, and Panskura. Egra is a city with a municipality in the Purba Medinipur district. It is the headquarters of the Egra division. The current study area is the smallest municipality area of Purba Medinipur District. It is situated in the southern west portion of the district. Egra municipality was established in 1993 with 14 wards and is located at 21°09' N and 88°53'E. The study represented 17.21 sq.km. and the elevation is 11 meters only. The municipality area has a total population of 30148, and the slum population was 23299 in 2011.The percentage of the slum population is 77.28. The percentage of the population engaged in main or marginal works is 34. Egra Municipality's economic activity is based on agriculture and business. A large portion of the area of Egra Municipality is controlled by agriculture. The population growth rate is 19.7 per cent. The total population is 30148, and the density is 1752 sq/km. The total Slum population is 23299. The highest (4318) and lowest (1200) population is seen in Ward no 08 and 07 (Figure.1).

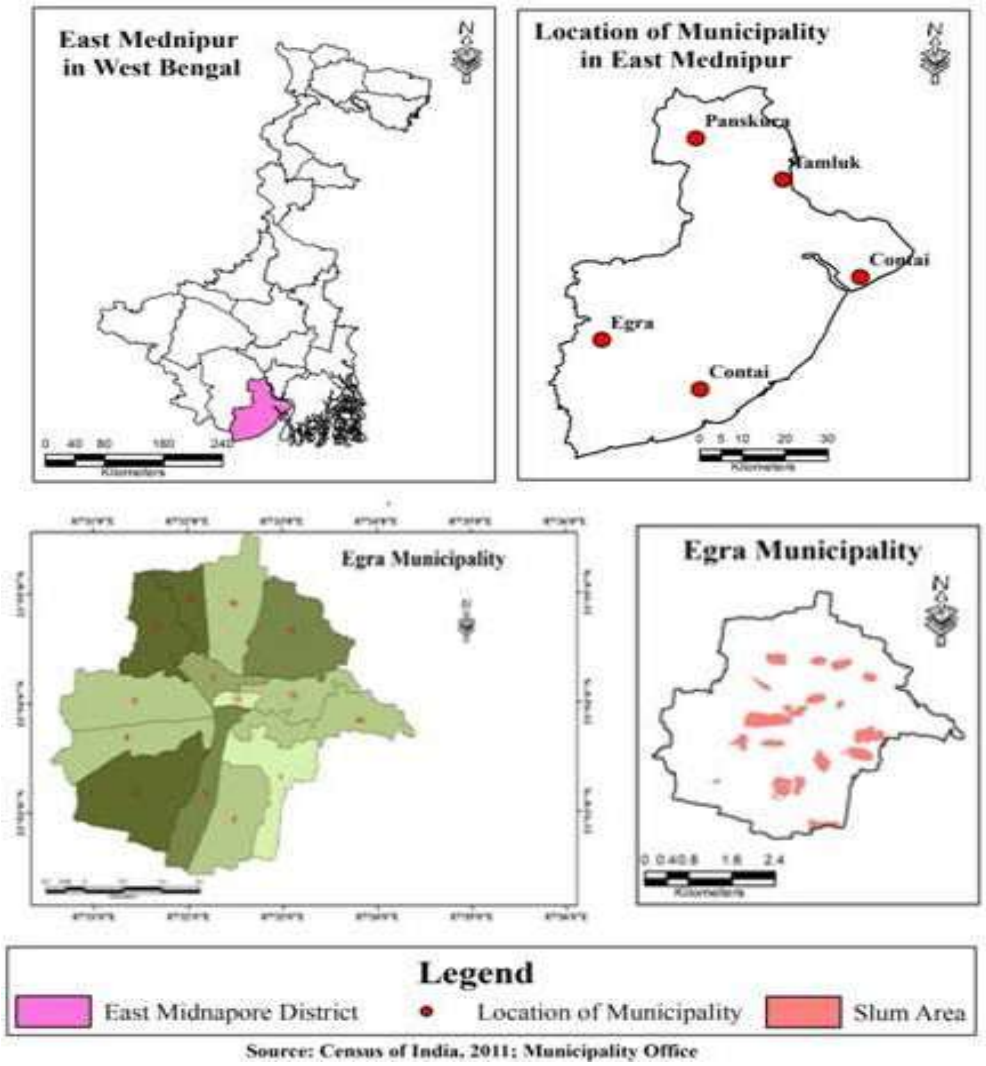

Figure 1: Geographical location of the study area.

2.2 **Problem Statement:**

Rapid urbanization in India has led to the proliferation of slums, particularly in smaller municipalities like Egra Municipality, where poor infrastructure, inadequate basic amenities, and socioeconomic deprivation severely affect the quality of life. Despite the growing emphasis on inclusive urban development, slum residents continue to face deteriorating living conditions, underscoring the urgent need for a comprehensive assessment and targeted interventions to improve their well-being. slum peoples do not have proper access to basic services due to infrastructure deficiency. The slum infrastructure improvement plan has been initiated in this context.

2.3 **Selection of the Variables:**

In a study of municipalities, five components are crucial for the quality of life: material wellbeing, health, education and literacy, engagement in the productive sphere, and participation in the social sphere (Stewart, 2002). Establish specific steps that must be taken to calculate a composite score. Before proceeding, the measurements must be selected based on a theoretical framework. This method is called the "top-down approach." However, the "bottom-up approach" is more often used when making composite measures of Quality of Life (McGillivray 2007 et al.). The bottom-up method uses survey methods to determine which dimensions belong in a composite index (Sirgy, 2011). This study looks at the Quality of Life of people who live in slums in Egra municipality of Purba Medinipur, which is mainly based on a few carefully chosen objective indicators of QOL because they are easy to find, can be measured and are important to this study. The essential three indicators and eight variables selected for this study.8 variables

were chosen because they collectively capture the socio-economic, infrastructural, and environmental dimensions of slum living conditions, providing a comprehensive and multi-dimensional assessment. Each variable directly influences the health, safety, livelihood, and overall well-being of slum dwellers, making them essential for understanding disparities across different urban wards. All variables ensure a balanced and holistic evaluation of QOL in Egra Municipality's slum areas,
supporting targeted policy interventions and inclusive urban development strategies. Each indicator is subdivided into several variables that explain the result using the indicator (Table 1).

Components	Variables	References
Social	Illiterate population	Haq et al. (2009)
	Toilet facility	Tanni et al. (2014),
Economic	Economic condition	Ehrenpreis (2006), Mondal. S (2020),
Environmental	Types of houses	Roy. A (2005), Majale (2006),
	Security of Land Tenure	McGranahan et al. (2012),
	Source of drinking water	Das et al. (2012), Krishna et al. (2008)
	Water logging	Jha et al. (2014),
	Types of roads	Sydunnaher et al. (2019)

Table- 1 Selection of Variables.

2.4 **Criteria for the selection of the Study area:**

Most studies focus on metropolitan areas and rely heavily on quantitative data, often neglecting qualitative insights and participatory approaches. Egra municipalities urbanization rate is lowest compare to other municipalities of Purba Medinipur district, also a smallest municipality in Purba Medinipur in terms of area (17.21 sq. km) and has a highest slum population of 77.28%, indicating high urban poverty, poor infrastructure, and low socioeconomic development. This study concentrated on twenty eight slums pockets of 62 notified slums of Egra Municipality. 28 slums were chosen based on two criteria:

(a) Slums have been chosen from Egra municipality based on higher and lower concentrations of slum population with the entire population of the ward.

(b) One slum was chosen the city's heart. Other slums were chosen from the peri-urban area, another slum was chosen from longest distance coverage ward in the municipality. A total of twenty-eight slums of fourteen wards were selected from for work. 2,136 households have been established in these 28 slums. Sitala Mandir Para (Slum code- 100036), ward no- 8 of Egra municipality, has the highest number of slum dwellers, as well as slum households. (Table 2)

2.5 Sampling and sampling size:

Egra municipality estimates that there are 2136 total households in twenty-eight slums (Census of India, 2011). A total of 2136 slum dwellers households were selected using the formula below (Yamane, 1973).

$n = N/\ 1 + Ne2$ (1)

where N is the household size (1780), and e is the level of precision (here ± 5 per cent precision level), assuming a 95 per cent confidence level and p = 0.5. After getting the sample size of 374 using the above equation (Eq. 1), the authors used Yamane's formula for sample size.

Ward no.	Slum code	Name of slums	Area (sq. m)	Total Population	No. of Household	Sample size	Actual Sample size
1	10003	MAITY PARA	28600	533	117	20.49	20
1	10081	MASTER PARA	29710	109	21	3.68	10
2	10016	PAYRA PARA	69710	690	148	25.91	25
2	10063	LAIKA PUKUR	29780	120	34	5.95	10
3	10005	HARIMANCHA PARA	36750	313	75	13.13	13
3	10031	BASANTA SARANI COLONY	53790	373	88	15.41	15
4	10006	BELTALA PURBA	75340	533	124	21.71	21
4	10071	BELTALA UTTAR	63240	345	80	14.01	14
5	10007	ADIBASI PARA	67980	574	119	20.84	21
5	10033	BERA PARA	50340	306	68	11.91	12
6	10008	GIRIPARA ADIBASI COLONY	74310	420	110	19.26	19
6	10048	NAYAK PARA CHOWDHURICOLON	51340	83	20	3.50	10
7	10009	MISHRA PARA DAN COLONY	32360	262	51	8.93	10
7	10021	HATTANAGAR PASCHIM COLONY	54980	424	97	16.98	17
8	10057	KIRASANGHA COLONY	36540	155	31	5.43	10
8	10036	SITALA MANDIR PARA	71570	782	169	29.59	30
9	10074	MAJHI PARA	26370	62	17	2.98	10
9	10023	BAGCHA PARA	91360	390	100	17.51	18
10	10024	MAITY PARA	78380	184	37	6.48	10
10	10068	PAL PARA	53240	502	106	18.56	19
11	10075	PASCHIM PARA	66350	453	104	18.21	18
11	10013	KAJI NAJRUL ISLAM PARA	56530	156	41	7.18	10
12	10026	BIJBASTI PARA	63460	554	106	18.56	19
12	10060	JELE PARA	26310	124	30	5.25	10
13	10040	PATRA PARA	30670	110	25	4.38	10
13	10061	ACHARIYA PARA	33710	456	108	18.91	19
14	10028	BHUIA PARA	43280	383	74	12.96	13
14	10062	DESHAPRAN COLONY	43170	175	36	6.30	10

Table-2 Sample size of Egra municipality.
Source- Calculated by authors from Municipality data.

Selection as the number of HHs in the slums of Egra municipality is known and not infinite in nature. The slum-wise sample size was determined (Table 2) using a proportionate allocation approach using Eq. 2.

$$n1 = n * (N1/N) \quad (2)$$

where $n1$ = sample size for selected, n = total sample size, $N1$ = selected slum households and N = Total households of the selected slums. For example, in the case of MAITY PARA (Slum code- 10003), ward no 1 of Egra municipality slum, the sample size has been found

= [374*(117/2136)] = 20.48 =20 (Table 2). A minimum of ten household surveys should be conducted in each small slum household or ward area, resulting in a total sample of 423 households. A detailed list of surveyed households from each selected slum has been given in (Table 2)

2.5 Data collection method

Both Primary and secondary data were used in this study. The field survey was conducted among the twenty-eight notified slums of Egra municipality. Secondary data from the District Statistical Handbook, public reports, the Census of India, and all municipality offices have been collected. Primary data have been collected through structured questionnaires. The survey was conducted using a random sampling method. Slum households were surveyed from each ward using random survey methods. Slum pockets selection processes will be based on a municipality ward's high and low population concentration pockets.

2.6 Methodology:

This study tries statistically to measure the Quality of life of slum dwellers both qualitatively and quantitatively. The Quality of life of slum dwellers has been assessed using the Normalized index, Composite score index and Standard deviation technique (Jha et. al, 2014). The normalized value for each variable is calculated using the formula:

$$\text{X Normalized} = \frac{\text{Actual value(x)} - \text{Minimum value (x)}}{\text{Maximum (x)} - \text{Minimum (x)}}$$

Where x is the actual value, min(x) is the minimum value in the dataset, maximum(x) is the largest value in the dataset. To calculate the composite index based on eight variables such as Illiterate population(X1), No. of non-earning Population in slum (EconomyX2), Remote
access to drinking water source(X3), Slum population identifying their land tenure ship as encroached or others(Security of land tenure, X4), Slum population identifying their houses as Kutcha & Other,(types of house, X5), Slum population identifying water logging 1 day (Water loggingX6), Slum population having access road to house as Kutcha road (types of roads, X7), and Slum population identifying use of toilet as others (toilet facility, X8) have been chosen to determine the Quality of life (QOL). All raw values of particular indicators have been selected as percentage values. Then, the percentage value of an individual parameter is added to analyze the present status of Quality of life, individual parameter scores has been analyzed comparatively in ward wise and also represented in the GIS environment (Arc Gis). Finally, the whole sums of selected parameters score individual ward wise, have been categorized as Very good, good, and Medium, poor and very poor condition based on the composite score of Quality of life. The highest weightage values were assigned to variables that determine a very poor quality of life, and the lowest weightage values were assigned to variables that determine a very good quality of life. This study also presents a ward-wise comparative analysis of slum quality of life and ranking. In this study, a correlation matrix (Carl Pearson) has been used to identify the principal factors that represent the quality of life in Egra Municipality. Finally, several recommendations were presented for the inclusive development and advancement of slum conditions.

3. RESULT AND DISCUSSION:

The census of India (2011) indicates thatEgra had a total population of 30,148 of which 15,291 (51%) were males and 14,857 (49%) were females. The population below 6 years was 3,241, out of a total population of 3,241. The share of the slum population is 25637 out of the total urban population, and the number of households is 5776.Twenty-eight identified slum population is 9571. In Egra Municipality, the share of male and female slum population is 50.82% and 49.18%, respectively. A maximum of the slum dwellers belongs to the general class (79.19%), Scheduled caste (13.28%), and Scheduled Tribe (1.78%). Most people belong to the Hindu (88.52%) and Muslim (11.43%) communities (Primary survey-2024), while the rest belong to the Christian and Other Backward Caste communities. The currently estimated population of Egra Municipality in 2025 is approximately 43,000.

Status of Illiteracy of Slum Dwellers(X1):

A literate individual possesses the capacity to read and write in at least one language. Literacy is one of the vital social factors that control quality of life. Social status cannot be upgraded without a high literacy rate and a high quality of life. Here, this is a good indicator that the literacy rate among slum dwellers is as high as 90.88%. This literacy rate has shown that they are not excluded from the education system

(Patatas, 2024). On the other hand, the illiteracy rates for the male and female populations are 24.96% and 75.06%, respectively, among the total illiterate population (Mitra, 2020) (Figure 2a).

Status of economy of slum Dwellers(X2):

The economy is a key factor in measuring quality of life (Li, 2024). A good economic condition indicates a good Quality of life—a high percentage of an economic factors of slum dwellers dominates the rest of all other factors. Residents in slums generally engage in occupations such as construction workers, daily-wage laborers, and industrial workers. Vendor's, etc.(Bhowmik, S. K, 2009). Egra is an agriculture and business-oriented municipality. 34 percent of the population is engaged in main or marginal work. A number of earning populations in Slums is a main component of the economy. Earning and non-earning slum populations share 44.35 and 55.65 (Table 3) per cent in Egra municipality, and this is not a good sign for slum Quality of Life. For analysis, the economic condition of slum dwellers in Egra Municipality has been classified into three categories: high, medium, and low (Pandey & Bhardwaj, 2021). The results show that most of the wards have come under the medium category. Accounting for non-earning population is the ward two come under the high, ward 4,5,7,10,11,12,13,14 and ward 1,3,6,8,9 low category. So, wards no 1,3,6,8,9 of slum dwellers deserves a high Quality of life (Figure 2b).

Drinking Water Facility(X3):

Access to drinking water means collection time for drinking water sources. The source of drinking water is a significant social factor that influences the quality of life of slum dwellers (Agarwal & Rawat, 2023). Drinking water collection time is less indicates a better quality of life. Here most of the slum dwellers (44.75%) (Table 3) have been using public- tube well, bore or hand pump as drinking water. Slum dwellers also used public taps and individual taps, So these figures show that they have been enjoying the urban infrastructure facility (Prasad, 2019). After analysis, the data, ward-wise, shows that ward no. 1,2,3,5,7,10,13 have better facilities for Drinking water because most of the people have taken drinking water from the Municipality tap and Individual tap. Those ward slum people enjoy less access time. As the low access to drinking water facilities falls under Wards No. 6, 8, 9, 13, and 14. The facility's drinking water has a medium Quality in ward no. 11,4 because most slum dwellers have not had access to proper drinking water facilities from the Municipality tap (Prasad, 2019). As the share of drinking water access facilities among all wards, most wards have good Quality (Figure 2c).

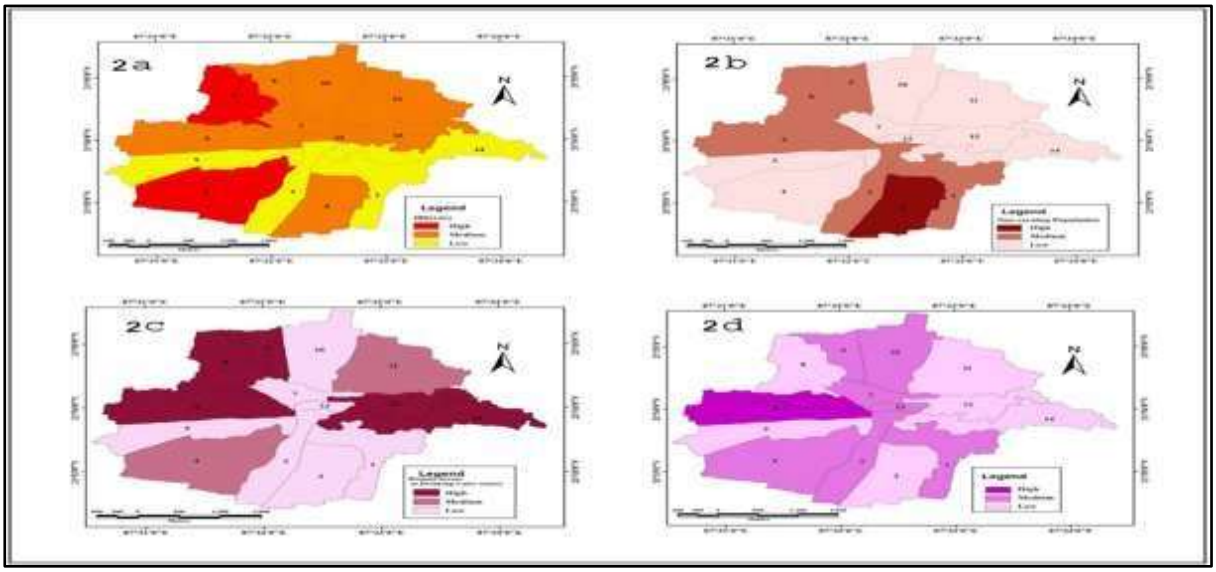

Figure 2: a) Status of Illiteracy, b) Economic condition, c) Drinking water facilities, and d) Pattern of land tenure security.

Pattern of Land tenure security(X4):

Land tenure security is another important variable that can determine the quality of life of slum residents. Land is one of the most valuable assets of slum dwellers, serving as a source of income, food, shelter, and social identity (Rao et al. 2022). Access to Security of land reduces vulnerability to hunger and poverty.

Most of the people in the slums of Egra Municipality have possession certificates or occupancy rights. 39.27 (Table 3) per cent of slum dwellers lived on Encroached public land. A very small percentage of slum dwellers have their land. So, this type of Figure indicates the slum people are in good condition (Figure 2d).

Housing Condition(X5):

The natures of houses normallydepend upon the geographical atmosphere as well as financial and social framework of the people (Sahay, 2006). In Egra Municipality, most of the slum dwellers live in kutcha and pucca houses. The figure is nearly about 55.13%, and 36.24% live in pucca houses. Shelter on the roof is also an important factor which affects Quality of life (Conzatti, 2022). Here, 31.37% of the roof has asbestos, and the cemented roof is 727.91%, which indicates a moderate quality of life (Table 3). For analysis, the housing conditions among the slum dwellers in Egra Municipality have been classified into high, medium, and low categories. The results show that most of the wards have come under the medium category. Accounting for Quality of housing, wards 1,2,3,5,6,9,12,13,14 come under the Medium and Wards 4,8,10,11 low category (Figure 3a).

Water Logging(X6):

In Egra slum areas, there is no proper drainage facility. During the rainy season, slum dwellers are the most severely affected. Unplanned growth in the slum area has blocked the natural drainage system or courses, which is the main cause of water logging and stagnation in different parts of the Slum (Subrina & Chowdhury, 2018). This waterlogging creates another type of health problem. Water logging time greater than one day indicates a poor Quality of Life. The waterlogging situation is good in Wards No. 2, 3, 6, 11, and moderate in Wards No. 5, 8, 10, 12, and 14, and worst in Ward No. 1,4,7,9,13 (Figure 3b).

Types of Roads(X7):

The road network is an important parameter for social and economic change. Road plays dynamic changes in the growth and development of a city. Most of the roads of the Egra municipality slum area roads are katcha in nature. Slum roads are very short, narrow, and congested (Plekker, 2021). Cars cannot easily get entry on the slum roads. During the rainy season, the condition of the roads continues to deteriorate. There are four main types of roads in Egra municipality. These are motorable kutcha (39%), Motorable pucca (32%), non-motorable kutcha (25%0 and non-motorable pucca (4%) (Table 3). The roads in wards 1, 2, 3, 4, 5, 6, 7, 8, 11, and 12 are mostly in medium condition (Figure 3c).

Toilet Facility(X8):

If we consider the toilet facilities, 15.12% (Table 3) of slum people go for open Defecation. 39% use their own dry latrine, and 34% use a shared dry latrine. This leads to an average quality of life. Few wards have faced the problem of toilet facilities. Low-Quality toilet facilities have been seen in ward no. 1,4,7,9,13, and the highest quality toilet facilities are found in ward no. 2,3,6,11 (Figure 3d).

4. Quality of Life (QOL):

To evaluate the Quality of life among slum dwellers in Egra municipality, the variables have been classified based on their aggregate performance. In contrast, the composite score value is 51.62, with a standard deviation of 5.31, and is classified as Very Good, Good, Medium, and Very Poor. 39% of the slum dwellers are in poor (24.15%) and very poor (13.85%) condition (Table 3). Here, only 15.87% of people are enjoying a good Quality of life, and the rest of the people are under moderate conditions. This analysis indicates that the quality of life in the Egra municipality slums is moderate to high. Very good Quality of life inwards no 13,01 and poor and very poor Quality of life inwards no 04,08,09 and 11,03, respectively (Table 4). The main determinant factors of quality of life areland tenure security, literacy, and drinking water facilities (Dachaga & de Vries, 2021). The slums which have a very good condition of Quality of life are Maity para – Patna Basti and Hattanagar Mandir Colony - Pondapara. These slums' Quality of life is good because here, there is good land tenure security, good drinking water, a Low illiteracy rate, and toilet facilities are available. On the other side, the very poor conditions prevail in Alua – Mansatala, Bangsidharpur, Janapara, Raulpara – Musjidpara, and Bagcha – Akhlabad slums (Table 5). These slum's Quality of life is worse because of a high proportion of Illiterate, non-earning population and Kutcha houses (Figure 4).

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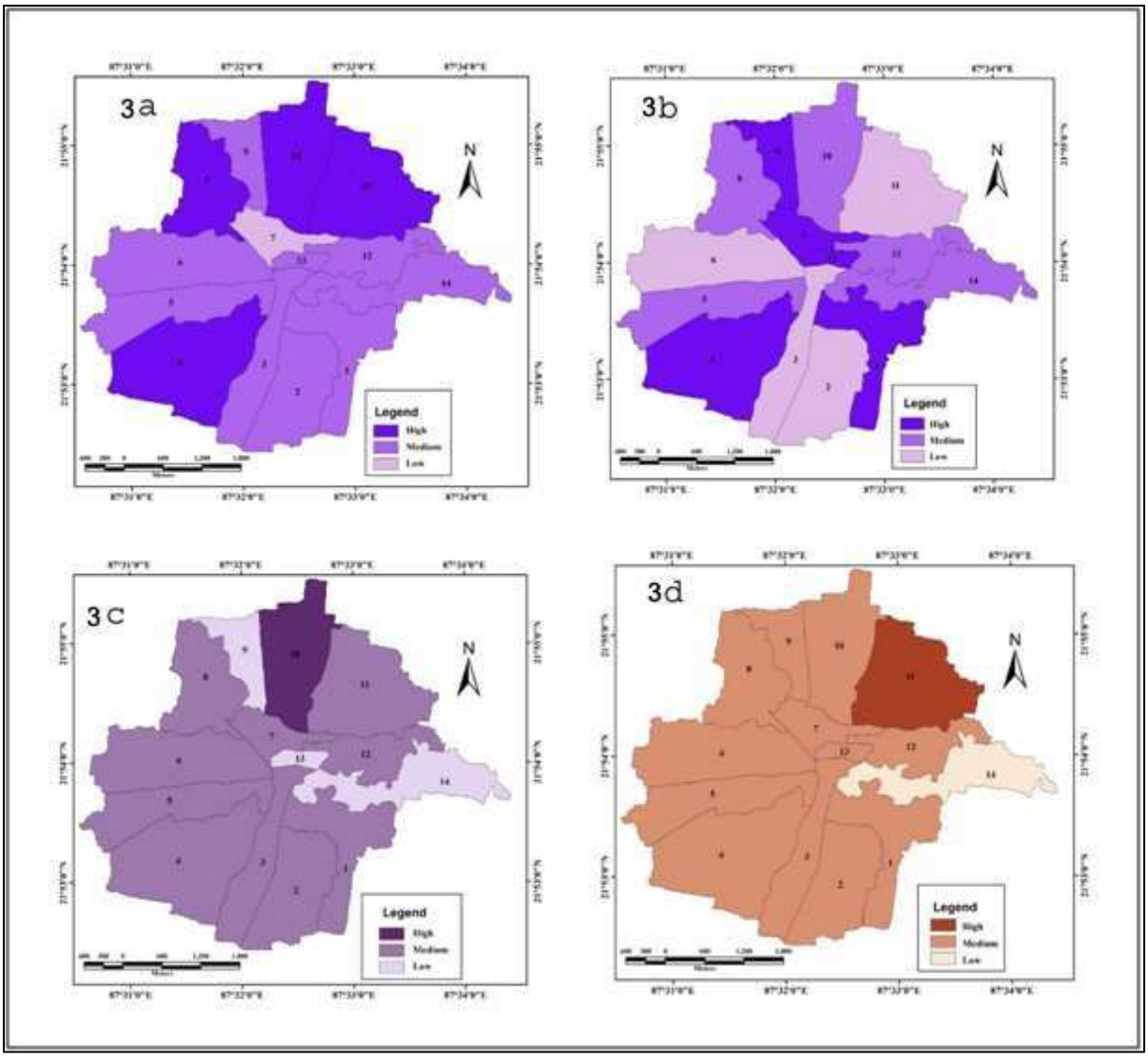

Figure 3: a) Housing condition, b) Water logging condition, c) Types of roads, and d) Toilet facilities.

Table – 3: Composite Score for Slums of Egra Municipality

Ward No.	Illiterate population	Economic condition	Source of drinking water	Security of Land Tenure	Housing Condition	Water logging	Types of roads	Toilet Facility	QOL
1	2.13	12.67	2.36	0.84	12.23	9.13	3.98	2.98	46.31
2	7.19	14.41	2.35	0.84	12.25	9.13	4.02	2.94	53.13
3	2.21	14.91	6.57	0.88	19.51	9.16	3.99	2.99	60.23
4	15.38	18.71	2.37	0.85	15.87	9.17	5.26	2.99	70.6
5	10.47	8.70	2.15	1.01	12.25	9.12	9.13	2.98	55.81
6	4.71	10.29	7.28	0.91	9.41	9.14	5.36	2.93	50.04

7	2.23	12.02	6.61	0.87	19.47	9.17	3.97	2.81	57.16
8	16.26	13.92	6.59	0.84	15.83	9.15	3.40	2.93	68.92
9	5.35	13.60	2.42	0.88	19.50	9.15	26.06	3.00	79.95
10	2.32	6.71	2.34	0.86	19.53	9.15	4.35	2.86	48.12
11	8.54	7.64	3.19	0.81	15.85	9.14	5.71	11.06	61.94
12	5.19	7.17	7.77	0.84	12.26	9.16	4.80	2.70	49.89
13	0.97	9.14	6.62	0.79	12.22	9.15	3.09	1.26	43.24
14	4.34	12.23	3.72	0.86	13.71	9.15	4.57	3.05	51.62

The Mean value is 51.62, and 5.31 is the Standard deviation.
Source: Calculated by authors with the help of Primary survey.
Figure 4: Quality of life of slum dwellers in Egra Municipality

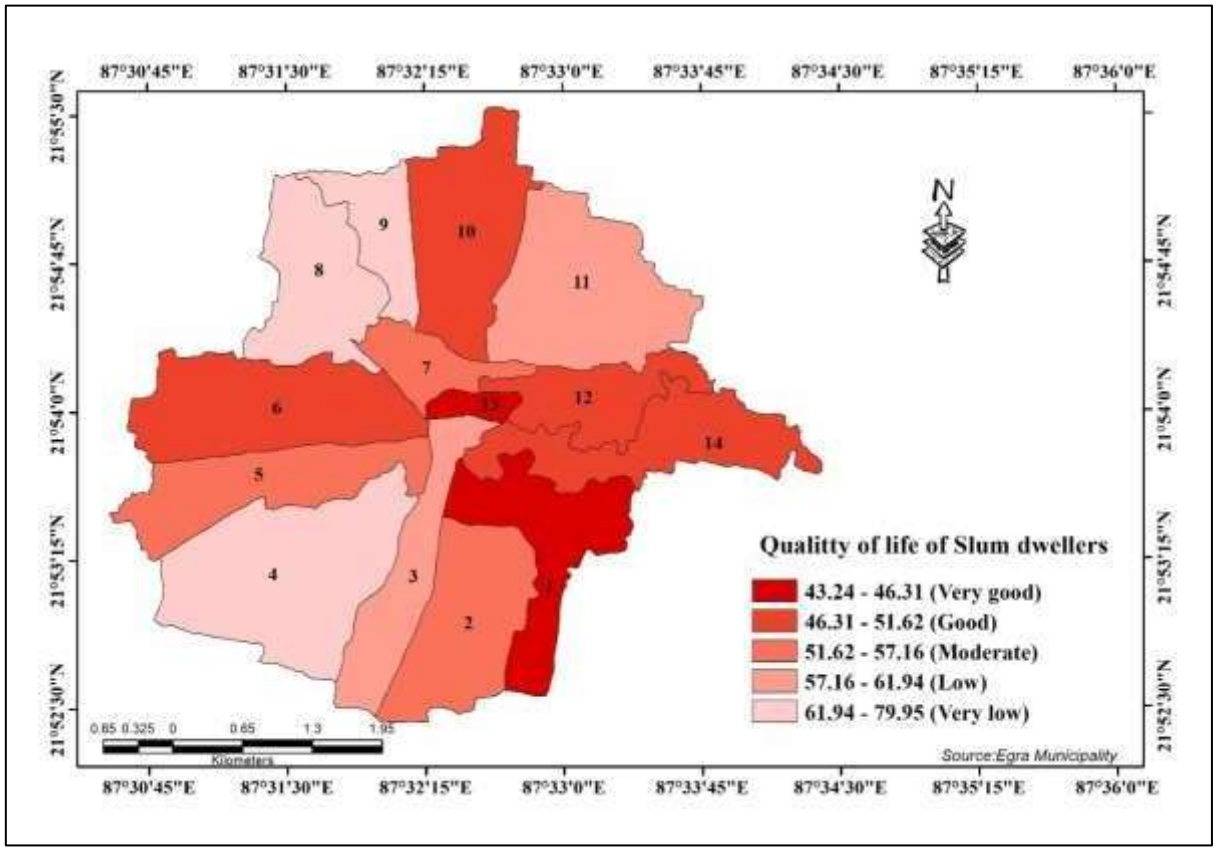

Table 4: Levels of Quality of Life in Slums of Egra Municipality.

Levels of Quality of Life	Composite Score	Number of Ward
Very poor	62.24 – 79.95	04,08,09
Poor	56.93 – 62.24	11,03
Medium	51.62 – 56.93	07,05,02
Good	46.31 – 51.62	10,06,12,14

Very good	41.00 – 46.31	13,01

Source: Calculated by authors

The overall position of words as per the QOL of Slum dwellers:

Finally, we got the position of words individually at Egra municipality based on the QOL of slum dwellers, which has been measured with the composition of eight important variables, (Table 5) shows that Ward Number 13 has $^{\text{the first}}$ position in terms of slum dwellers' quality of life, whereas Ward No. 9.

Table 5: Showing the Relative position of Wards based on multi-weightage value values.

Ward no.	Multi-Weightage Value	Rank
1	46.31	2
2	53.13	7
3	60.23	10
4	70.6	13
5	55.81	8
6	50.04	5
7	57.16	9
8	68.92	12
9	79.95	14
10	48.12	3
11	61.94	11
12	49.89	4
13	43.24	1
14	51.62	6

Source: Calculated by authors.

5. Over all, critically engage with results using comparison:

The study on the Quality of Life (QoL) of slum dwellers in Egra Municipality reveals both alignment with and divergence from existing literature on urban poverty and slum conditions. While global reports such as (UN-HABITAT, 2004) note a decline in the proportion of urban residents living in slums, this study finds that despite high overall literacy (90.88%), female illiteracy remains alarmingly high at 75.06%, reflecting persistent gender disparities documented by (Patel et al. 2015) in Indian slums. The finding that over 55% of the slum population is non-earning contradicts the assumption that urbanization automatically enhances livelihood opportunities, reinforcing critiques that economic benefits are unevenly distributed (Birch & Wachter, 2011). In terms of infrastructure, 44.75% of slum dwellers access water via public or individual taps, indicating relatively better service delivery compared to larger cities (Prasad, 2019), yet disparities across wards highlight inequitable resource allocation, as noted by (Subrina & Chowdhury 2018). Chronic water logging in several wards aligns with common findings in Indian slums, underscoring poor drainage and unplanned urban growth as recurring challenges (Dachaga & de Vries, 2021). Although 39.27% of slum dwellers live on encroached land, the presence of occupancy certificates suggests some level of recognition by local authorities, contrasting with more precarious tenure situations reported in Delhi (Gupta, 2012). Housing conditions reveal that over half of the slum dwellings are kutcha, and 15% practice open defecation, indicating that despite policy initiatives like Swachh Bharat Mission, basic amenities remain inadequate—consistent with findings by (Agarwal & Rawat 2023). Overall, the composite QOL index identifies Ward 9 as having the worst quality of life, marked by high illiteracy, economic marginalization, and poor housing, while Ward 13 ranks highest (Table 5) due to better literacy and infrastructure, demonstrating how localized conditions shape QOL within the same municipality. These results affirm that urban poverty in India is not only economic but also infrastructural, spatial, and social, calling for targeted, inclusive, and data-driven interventions at the ward level.

6. CONCLUSION:

This study tries to evaluate the Quality of Life of individuals residing in slums inside Egra Municipality.It's also a multidimensional approach. This multidimensional analysis displays that maximum slum dwellers are in medium to high condition. In Egra Municipality slum area have a good education, drinking water facilities and toilet facilities, but the rest of the social factors, like Security of land tenure, types of houses, non-earning population and types of roads, are in very poor condition which leads to poor Quality of life. Literacy, Economic and Housing conditions is the important determinant factors, which are backbone of slums quality of life in Egra municipality. Literacy and education can change and progress the slums. More than 75 percent of the slums of Gulbarga were illiterate (Schenk, H. (2022). has displayed that near about 50 percent of the slum population in slums of Bombay and Chandigarh was illiterate (Gill M. S 2007). Slum residents of Ward no.- 13 enjoyed good quality of life (Table 5) in all Wards. Here, the most important and positive factor is that the literary level is high. Economic activities are the main key factor behind the Quality of Life in slums, so, progress in the socioeconomic scenario led to upgrading the Quality of life in slums. The Government must assist and inspire more private entrepreneurs to generate more economic activities that can deliver better improve of their socioeconomic status. Moreover, despite identifying significant issues such as gender inequality in literacy and insecure land tenure, the study offers limited policy relevance and actionable recommendations. It misses opportunities to link findings to existing urban policies such as the Smart Cities Mission or Swachh Bharat Mission, and fails to suggest future directions for targeted interventions, participatory planning, or scalable solutions that could inform municipal strategies for inclusive urban development. It also misses opportunities to suggest future research directions, scalable interventions, or participatory planning strategies that could inform inclusive urban development at the municipal level.

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