

RESEARCH ARTICLE



Quality of Life in Metropolitan cities of Uttar Pradesh

Dr. Sakreen Hasan*

¹Research Scholar, Jawaharlal
Nehru University, New
Delhi-110067

Abstract

Urbanization is a population shift from rural to urban areas, "the gradual increase in the proportion of people living in urban areas", and the ways in which each society adapts to the change. Being a complex socio-economic process closely connected with scientific technological revolution, urbanization exercises a growing influence on all aspects of society, reflecting the nature of economic and regional development.

The numbers of metro cities in India are continuously increasing from 12 in the year 1981 to 23 in 1991, 35 in 2001 and 54 in 2011. This shows that urbanization is increasing but mostly in or nearby metro cities of the country. But the capacity of metro to assimilate increasing urban population is not as good as it should be.

The sheer magnitude of the urban population, haphazard and unplanned growth of urban areas, and a desperate lack of infrastructure are the main causes of such a situation. The rapid growth of urban population (decadal growth of total population in India is about 17.7 percentage points during 2001-2011 while urban population growth is about 31.8 percentage points)[1] both natural and through migration though there is decline of rural-urban migration[2], has put heavy pressure on public utilities like housing, sanitation, transport, water, electricity, health, education and so on. So the study of metro cities is needed.

This study is about the quality of life in seven metro cities (Kanpur, Lucknow, Ghaziabad, Agra, Meerut, Varanasi and Allahabad) of Uttar Pradesh. For the analysis some index are used in this paper like deprivation index, multi-dimension poverty index and quality of life index. This could give us insight of the sustainability of the metropolitan cities.

1 | INTRODUCTION

Urbanization is a population shift from rural to urban areas, "the gradual increase in the proportion of people living in urban areas",

and the ways in which each society adapts to the change. According to United Nation's estimates, in 2010 about 55.1 percent of the world population is urban while there is great gap between developed and less developed nations. About 77.1 percentage

point urban population lives in developed countries and in less developed countries the proportion of urban population is approx. 44 percent.¹ Although India is one of the less urbanized countries of the world with only 31 per cent of her population living in urban agglomerations/towns, this country is facing a serious crisis of urban growth at the present time. The sheer magnitude of the urban population, haphazard and unplanned growth of urban areas, and a desperate lack of infrastructure are the main causes of such a situation. The rapid growth of urban population (decadal growth of total population in India is about 17.7 percentage points during 2001-2011 while urban population growth is about 31.8 percentage points)² both natural and through migration though there is decline of rural-urban migration³, has put heavy pressure on public utilities like housing, sanitation, transport, water, electricity, health, education and so on.

Though urbanization is an indicator of development, but it is also bitter fact that poverty is growing faster in urban areas than in rural areas. Being a complex socio-economic process closely connected with scientific technological revolution, urbanization exercises a growing influence on all aspects of society, reflecting the nature of economic and regional development⁴. Urbanisation is closely associated with modernization, industrialization and sociological ra-

¹World urbanization prospects: The 2014 revision, Department of Economic and social Affairs, United Nations.

²Census of India, 2011

³Amitabh Kundu, 'Urbanisation and urban governance – search for a prospective beyond neo-liberalism', *Economic and Political Weekly*, Vol. XXXVIII, No. 29, July 19, 2003, pp. 3079-3087.

⁴Rao, P. Padmanabha (1999). "Urbanization in Telangana and Its Future Implications", Rao, R. Ram Mohan and Simhadri, S. (eds): *Indian Cities: Towards Next Millennium*, Rawat Publication, Jaipur.

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Corresponding Author: Dr. Sakreen Hasan
Research Scholar, Jawaharlal Nehru University, New Delhi-110067
Email: Sakree85_ssf@jnu.ac.in

tionalization. Though Urbanisation is an indicator of development, it also brings many socio-economic problems.

The urbanization trends in India is a direct reflection of the structural changes that are taking place in the economy.⁵ Much of the growth of the economy comes from economic activities that are likely to be concentrated in and around existing cities and towns; particularly large cities.⁶ Mark Jefferson has propounded the primate city concept which is based on the agglomeration effect by which a city grows disproportionately to outstrip the others; this is what happens in the current scenario.

The numbers of metro cities⁷ in India are continuously increasing from 12 in the year 1981 to 23 in 1991, 35 in 2001 and 54 in 2011.⁸ This study is about the quality of life in seven metro cities (Kanpur, Lucknow, Ghaziabad, Agra, Meerut, Varanasi and Allahabad) of Uttar Pradesh. There is wide variation in the availability of urban infrastructure in the cities and consequently many of them deprived in some or the indicators which are used for the analysis.

2 | OBJECTIVES:

1. To determine and examine the Quality of Life of different metro cities of Uttar Pradesh.
2. To check the deprivation of metro cities on various indicators (which are used to calculate the multidimensional poverty index)
3. To compare the Quality of Life of different metros with United Nation's Sustainable development goals.
4. To see the sustainability of urban development in India.

⁵Das, S. (2013). Sectoral Transformation of Working Population and Status of Employment- A Case Study of Chanditala C . D Block – I, Hugli. *The International Journal Of Engineering And Science (IJES)*, Vol.2(4), 1–7

⁶Wheaton, W. C., & Shishido, H. (1981). Urban Concentration, Agglomeration Economies, and the Level of Economic Development. *Economic Development and Cultural Change*, Vol.30(1), 17.

⁷Cities having population above ten lakhs.

⁸Census of India, 1981, 1991, 2001 and 2011.

3 | DATA SOURCE AND METHODOLOGY:

The study is based on the secondary data of Census of India, 2011. To determine the Quality of life in metro cities, deprivation values⁹ and composite index has been calculated¹⁰.

To calculate the composite index 8 variables were chosen to determine QOL. Statistically each variable was powered with X1, X2 etc. Reasonable weightages was assigned to each variable. Composite Scores of all variable are taken as X value and Mean value is calculated. After that SD value is calculated.

Second method, deprivation values has been calculated with three indicators for each city. The weightage is used is same as in multi-dimension poverty index of UNDP.

Both the methods helps in the comparison of different metro cities of Uttar Pradesh and also tell us that which city is lacking the most, which would be helpful for the policy making to make the urban ecology more sustainable and liveable.

4 | STUDY AREA:

The urbanization process involves not only an increase in concentration at a point but also multiplication of points of concentration of urban settlements. There is wide variation in urbanization among the cities of the world; there is concentration of urban population in million plus cities. In India, population of million plus cities rose from 18 percent to 39 percent during 2001 to 2011 and it is being estimated that it would rise up to 49 percent by 2030.¹¹ In Uttar Pradesh about 71 percentage point of urban population lives in the seven metro cities (Agra, Allahabad, Ghaziabad, Kanpur, Lucknow, Meerut, Varanasi). Each city has its unique feature but to see the difference between them, these cities has been

⁹Used to calculate the Multidimensional poverty index
¹⁰Jha Darshan Kumar and Tripathi V. K. (2014). ‘Quality of Life in Slums of Varanasi City: A Comparative Study’ *Trans. Inst. Indian Geographers*, Vol.36(2), 171-183.
¹¹United Nations, Population Division, Department of Economic and Social Affairs, World Urbanization Prospects: The 2014 Revision

taken as these cities are carrying a large chunk of population of the state.

Urbanization in metro cities of Uttar Pradesh:

Uttar Pradesh has 22.27 percentile share of urban population according to census of India, 2011 which was 20.78 percentile in 2001 and is being increasing with the decadal growth rate of 28.8 percent that is slightly less than the national average but will certainly cope up. It may be because the state of Uttar Pradesh is mainly dependent on agriculture and primary activities and has the highest share of rural population of the country. Steadily the scenario is being changing and soon will catch up with the national average.

But in metropolitan cities of the state urban population is much higher than the state average.

About 72 percent of the total urban population of the state lives only in these seven cities. This indicates the unequal distribution of urban population in the state and totally unsustainable practice. That means the cities are exploding with the population while other areas have least burden. If we see within these metro cities also a large variation is found regarding the percentile share of urban population which is depicted in table 1.

TABLE 1: Share of population of metro cities of Uttar Pradesh

City Name	Total population	Percentage of population
Lucknow	2817105	16.16
Kanpur	2768057	15.88
Ghaziabad	1648643	9.46
Agra	1585704	9.09

Source: Census of India, 2011

In table 1, it can be seen that among these seven metropolitan cities, population pressure is more on two cities; Lucknow and Kanpur. There may be various factors for this; from historical perspective, industrial development to capital city of the state.

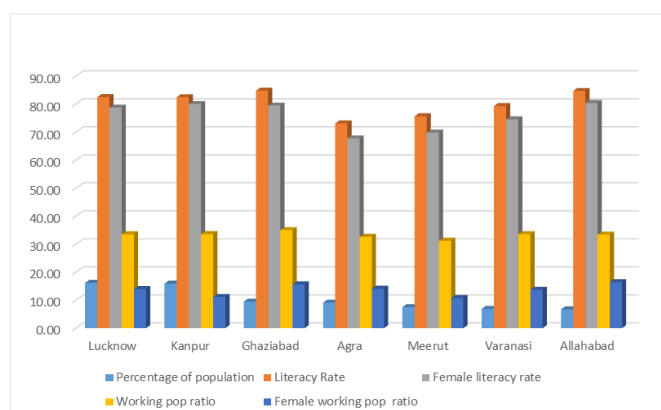
While the other attributes of these cities telling a different story that can be depicted in table 2 and in the comparative analysis is shown in figure 1

TABLE 2: Literate and working population of metro cities of Uttar Pradesh

City Name	Literacy Rate	Female literacy rate	Working pop ratio	Female working pop ratio
Lucknow	82.5	78.7	33.5	14.0
Kanpur	82.4	80.0	33.6	11.1
Ghaziabad	84.8	79.4	35.0	15.6
Agra	73.1	67.7	32.6	14.1
Meerut	75.7	69.8	31.2	10.7
Varanasi	79.3	74.6	33.6	13.7
Allahabad	84.7	80.4	33.4	16.4

Source: Census of India, 2011

In table 2 it is seen that the literacy rate of Agra and Meerut is much lower than the other cities and the condition of female literacy is much worse. But working population ratio of all the cities are more or less same except Meerut while female working population is much lower in Meerut and in Kanpur which is having much higher literacy rate. The over-all comparison is shown in figure 1.



Source: Census of India, 2011

FIGURE 1: Metro Cities of Uttar Pradesh

Figure 1 shows that Allahabad having the lowest share of urban population among these seven cities but it excels in other attributes like literacy rate, female literacy rate, working population and having the highest women working population share. While Kanpur is the second most populated cities among these cities and having high literacy rate but very low female working population.

To check the quality of life as a whole two indices have been used. First one is the composite index in which some parameters are used along with the appropriate weightage.

Parameters of quality of life:

In the present study altogether 8 variables have been carefully chosen to determine the existing quality of life in the metro cities of Uttar Pradesh.

Source of lighting (X1):

Electricity is considered as a parameter of measurement of development and quality of life. From this parameter it has been observe that the main source of lightning is electricity while the other one is the kerosene but at a low scale as compared to the electricity.

Fuel used for cooking (X2):

Regarding this as a parameter of the measurement of quality of life, it is seen that for the cooking LPG is used by the majority of the households. Kerosene, coal and cow-dug-cakes are others fuels which are used for cooking. But for this analysis only LPG and Kerosene is being taken.

Source of drinking water (X3):

Safe and pure drinking water is basic need for life. According to the Census of India, 2011, major source of drinking water of the cities is treated water from taps. And the other one is the water from hand pumps.

Housing condition (X4):

According to the housing data Census of India, 2011, the condition of most of the houses is good and liveable, especially in metro cities.

Latrine facility (X5):

Sanitation is not only important for healthy living but also ensuring a non-polluting environment. Latrine facility within the premises is very important for healthy life and better quality of life but in India situation is very cumbersome. The situation is worse in rural areas but are not good in cities also. In some cities of Uttar Pradesh, it much lower than the national average.

Drainage System (X6):

As the sanitation is important for a healthy life, the waste water outlet connected to the closed drainage is also very much important. Among these cities, in three cities (Lucknow, Agra and Meerut) not even half of the houses are connected to the closed drainage system.

QUALITY OF LIFE IN METROPOLITAN CITIES OF UTTAR PRADESH

Assets (X7):

For the analysis in this paper some of the assets are selected from the data given by the Census, 2011, like households having Television, Computer/Laptops, Mobile phones, Scooter/ Motorcycle, Car/Jeep/Van or having no asset.

Literacy rate (X8):

Literacy is very important for the societal development as well as individual upliftment. And female literacy is the reflection of a society towards the women empowerment. So it has been taken as an indicator for the quality of life.

TABLE 3: Selected Variables for Quality of Life of metro cities of Uttar Pradesh and their Xvalue

Variables	Parameters	Indicators	Weightage value	Lucknow		Kanpur		Ghaziabad	
				% of HH	X value	% of HH	X value	% of HH	X value
X1	Source of lighting	electricity	2	92.6	1.85	90	1.80	96.6	1.93
		kerosene	1	6.3	0.06	8.6	0.09	2.2	0.02
X2	Fuel used for cooking	LPG	2	81.9	1.64	76.7	1.53	85.8	1.72
		Kerosene	1	3.5	0.04	5.8	0.06	0.8	0.01
X3	Source of drinking water	Tap water	2	74.6	1.49	45.3	0.91	64.5	1.29
		Hand pump	1	13.8	0.14	31	0.31	11.8	0.12
X4	Housing condition	Good	2	66.1	1.32	57.3	1.15	71.7	1.43
		Dilapidated	1	4	0.04	4.7	0.05	1.2	0.01
X5	Latrine facility	Piped sewer system	2	54.4	1.09	62.5	1.25	65.4	1.31
		No latrine facility within the premises	1	9.8	0.10	13.9	0.14	3	0.03
X6	Waste water outlet connected to	Closed drainage	2	48.2	0.96	58.8	1.18	57.2	1.14
		No drainage	1	5.3	0.05	6.4	0.06	3.1	0.03
X7	Assets	Television	6	81	4.86	78.3	4.70	85.6	5.14
		Computer/Laptop	5	26.2	1.31	15.6	0.78	38.2	1.91
		Mobile phones	4	69.2	2.77	69.1	2.76	68.4	2.74
		Scooter/Motorcycle	3	53.2	1.60	41	1.23	47	1.41
		Car/Jeep/Van	2	16.1	0.32	9.3	0.19	27.1	0.54
		No assets	1	3.5	0.04	5.1	0.05	2.4	0.02
X8	Literacy (% pop.)	Total Literacy (% pop.)	2	82.5	1.65	82.4	1.65	84.8	1.70
		Female literacy (% pop.)	1	78.7	0.79	80.0	0.80	79.4	0.79

Countd...

Variables	Agra		Meerut		Varanasi		Allahabad	
	% of HH	X value	% of HH	X value	% of HH	X value	% of HH	X value
X1	95.80	1.92	93.70	1.87	94.20	1.88	95.00	1.90
	2.90	0.03	4.70	0.05	4.90	0.05	4.20	0.04
X2	78.60	1.57	70.50	1.41	76.40	1.53	81.80	1.64
	1.30	0.01	2.20	0.02	4.30	0.04	5.40	0.05
X3	62.90	1.26	69.10	1.38	75.30	1.51	92.50	1.85
	16.20	0.16	19.00	0.19	14.60	0.15	3.60	0.04
X4	62.30	1.25	64.60	1.29	62.40	1.25	69.40	1.39
	1.70	0.02	1.90	0.02	3.10	0.03	2.60	0.03
X5	40.70	0.81	35.80	0.72	78.10	1.56	61.10	1.22
	11.70	0.12	4.70	0.05	5.20	0.05	7.00	0.07
X6	34.50	0.69	30.40	0.61	85.90	1.72	53.90	1.08
	2.00	0.02	3.50	0.04	4.80	0.05	3.70	0.04
X7	88.70	5.32	78.20	4.69	80.80	4.85	86.20	5.17
	21.00	1.05	19.30	0.97	17.50	0.88	21.80	1.09
	67.10	2.68	67.80	2.71	70.10	2.80	71.20	2.85
	51.90	1.56	44.50	1.34	42.30	1.27	61.40	1.84
	13.40	0.27	12.40	0.25	7.80	0.16	13.00	0.26
	3.10	0.03	5.00	0.05	4.10	0.04	2.20	0.02
X8	73.11	1.46	75.66	1.51	79.27	1.59	84.67	1.69
	67.74	0.68	69.79	0.70	74.55	0.75	80.39	0.80

Source: Calculated by data of Census of India,2011

Levels of quality of life:

To determine the level of quality of life, quantitative analysis of data has been done. Aggregates of all the variables have been taken. A composite score has been calculated by adding up the total of all the variables for different metro cities separately (Table4).

The mean value of composite score is 21.72 with standard deviation 1.19. The levels of quality of life under deviation are grouped (Table-5).

TABLE 4: Composite Score for Metro cities of Uttar Pradesh

Cities	X1	X2	X3	X4	X5	X6	X7	X8	X	X-X
Lucknow	1.92	1.67	1.63	1.36	1.19	1.02	10.89	2.44	22.11	0.39
Kanpur	1.89	1.59	1.22	1.19	1.39	1.24	9.71	2.45	20.67	-1.05
Ghaziabad	1.95	1.72	1.41	1.45	1.34	1.18	11.76	2.49	23.29	1.57
Agra	1.95	1.59	1.42	1.26	0.93	0.71	10.91	2.14	20.91	-0.82
Meerut	1.92	1.43	1.57	1.31	0.76	0.64	10.00	2.21	19.86	-1.87
Varanasi	1.93	1.57	1.65	1.28	1.61	1.77	9.99	2.33	22.14	0.42
Allahabad	1.94	1.69	1.89	1.41	1.29	1.12	11.23	2.50	23.07	1.35

Source: Calculated by data of Census of India, 2011

TABLE 5: Levels of Quality of Life in metro cities of Uttar Pradesh

Levels of Quality of Life	Statistical Value	Composite Score	Name of the Cities
Good	to +2	22.91-24.1	Ghaziabad, Allahabad
Medium	to +	21.72-22.91	Lucknow, Varanasi
Poor	to -	20.53-21.72	Kanpur, Agra
Very Poor	to -2	19.34-20.53	Meerut

Source: Calculated by data of Census of India, 2011

When we calculate the composite index with these indicators (Table-3, Table-4, Table-5), it has been observed that Meerut city, Agra city and Kanpur city are lagging behind the other metro cities of the state of Uttar Pradesh. While Ghaziabad and Allahabad are the highest scorer, having good level of quality of life and the least one is the Meerut. It could be said that the population in metro cities is growing rapidly but the quality of life remains under scored because of the failure of the government in providing better amenities to the cities.

The analysis is supported by the other way of calculation for better understanding of the condition of the quality of life deprivation scores have been calculated on the same line of multidimensional poverty index used by UNDP (Table-6).

TABLE 7: Deprivation scores of Metro cities of Uttar Pradesh

Cities	Lucknow	Kanpur	Ghaziabad	Agra	Meerut	Varanasi	Allahabad	Weights
Education								
Literacy	1	1	0	1	1	1	0	1/6=0.167
Female literacy	1	0	0	1	1	1	0	1/6=0.167
Employment								
Employed	0	0	0	1	1	0	0	1/6=0.167
Female employed	1	1	1	1	1	1	1	1/6=0.167
Living standard								
No electricity	0	0	0	0	0	0	0	1/18=0.056
No access to clean drinking water	0	0	0	0	0	0	0	1/18=0.056
Households not connected to closed drainage	0	0	0	1	1	0	0	1/18=0.056
House has dirt floor	0	0	0	0	0	0	0	1/18=0.056
Household uses "dirty" cooking fuel (dung, firewood or charcoal)	0	0	0	0	0	0	0	1/18=0.056
Household has no car and owns at most one bicycle, motorcycle, radio, refrigerator, telephone or television	0	0	0	0	0	0	0	1/18=0.056
Score ci (sum of each deprivation multiplied by its weight)	0.501	0.334	0.167	0.72	0.724	0.501	0.167	
Is the household poor (c = 1/3 = 0.333)?	Yes	Yes	No	Yes	Yes	Yes	No	

Source: Calculated by data of Census of India, 2011

From table-6, this could be clear with the help of deprivation score of these cities that all of these seven cities are deprived on one or the other indicator (used for the analysis). Lucknow is deprived in literacy, female literacy and female employment; Kanpur on literacy and female employment; Ghaziabad on fe-male employment; Agra on literacy, female literacy, employment, female employment and households not connected to closed drainage for waste water outlet; Meerut is also deprived on many counts like on literacy, female literacy, employment, female em-ployment and households not connected to closed drainage for waste water outlet; while Allahabad is deprived only on female employment. Therefore, it can be seen that all the seven cities are deprived in female employment as compared to the national average. That means females are still very much lagged behind their counter parts male dominating society.

From these two different indices it has been analysed that the household of Ghaziabad and Allahabad are in good condition while all the other are considered to be poor and the condition of Meerut and Agra metropolitan city is worst among these cities.

Sustainable Development Goals and Quality of Life in Metropolitan cities of Uttar Pradesh:

The Brundtland Commission’s brief definition of sustainable development as the *“ability to make de-lopment sustainable—to ensure that it meets the eds of the present without compromising the ability of future generations to meet their own needs”*¹²

The Sustainable Development Goals (SDGs) are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. There are 17 Goals build on the successes of the Millennium Development Goals, including new areas such as climate change, economic in-equality, innovation, sustainable consumption, peace and justice, among other priorities. The goals are interconnected – often the key to success on one will involve tackling

issues more commonly associated with another¹³.

This work is related to the Quality of life in metro cities and we can observe that various goals and targets for various quality of life (QOL) indicators are set at global and national level. And when we compare these goals which the city level analysis, but this analysis shows that some metro cities are still very poor then we can imagine what could the condition of the small towns and villages where opportunities are still very much limited. The second goal of SDGs is related to the first goal as the hunger their hands to spend on food, if they remain poor then how could be hunger is removed.

In the field of education SDGs advocates the universalization of primary education but the study reveals that in some cities like Agra literacy rate is low and about 27 percent of total population and 32 of females are illiterate, that means it is still needed to work hard to achieve universal education. While the other goals are about gender equality and decent work and economic growth, the data of these cities shows that all the cities are deprived on the female employment front. Gender equality in cities is very much away from the mentioned goal.

The other goal is the clean, accessible water for all but data shows that in some cities like Kanpur, about 60 percent of the households are still not having the tap treated water. While no city is cent percent connected to tap treated water. This shows a dire need to provide safe and affordable water to the households. And when we see the condition of sanitation and drainage system, the situation is much appalling as in some of the cities above 60 percent of the household do not have piped water sewer system and waste water outlet connection to closed drainage system.

¹²World Commission on Environment and Development (WCED), *Our Common Future* (New York: Oxford University Press, 1987), 8.

¹³United Nations Development Programme.

5 | CONCLUSION:

It can be concluded here that cities of Uttar Pradesh are enlarging in number of population but not in facilities that should be provided by the government. Better infrastructure in the cities is the need of hour to improve the quality of life. If proper sanitation facility or drainage facility is not provided then it will directly affect the health of the population which results in the poor human development. While literacy rate is a basic factor in the development process, without education how could we imagine the growth of a country? For empowerment of women and to reduce the inequality among men and women, education is very important along with the safe and better employment opportunities.

This analysis suggest that much more work has to be done to achieve the Sustainable Development Goals (SDGs) and to maintain the sustainability of the cities.

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