

## **A Review Literature about Urban sprawl: causes, impact and method of controlling**

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### **ABSTRACT:**

The main objective of this paper is to find out the causes, impacts of urban sprawl by taking the case study of Lucknow city in Eastern India and giving some method of controlling sprawl. Urbanization may be a marvel which has in more ways than one influenced the lives of individuals to greater degree than any other improvement in later times. urbanization as such isn't perceived as a risk to environment and improvement but it is unprepared and unplanned sprawl that influences the accessibility to comforts and land use of any locale. urban sprawl are transition zones with infinite boundaries between rural and urban areas. urban sprawl has come about in misfortune of profitable rural lands, agricultural fields, open green space and misfortune of surface water bodies. hence there is a need to study and understand the phenomenon of urban sprawl. The finding from this paper attempts to understand the different causes in formation of urban sprawl, impacts on various factors and method of controlling urban sprawl by proposing policies.

**KEYWORDS:** Urbanization, Urban sprawl, Urban growth, Horizontal spread, Land depletion, Urban planning, Population growth, Controlling policies

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### **I. INTRODUCTION**

India is one of the emerging countries in the world and it is urbanizing at a rapid rate, due to this quick increment of urbanization, urban sprawl takes place. Urban sprawl is one of the main problems of cities. Cities tend to grow in a planned manner but when a certain amount of population is reached than pressure is created on city boundaries, in such a case formation of sprawl is seen on the boundaries or outskirts of the cities. Generally urban sprawl is known by many as unplanned and uncontrolled growth at the outskirts of cities. Characteristics of Sprawl development are varied from towns to towns, the following are the most common characteristics of the sprawl (National Geographic,2001):

- High volumes of traffic
- Scattering of businesses, shops, and homes.
- Inadequate public transportation.
- Pedestrian unfriendly streets.
- Zoning that divides neighbourhoods from offices, shops and restaurants.
- Large parking lots that push buildings back and farther away from each other

### **II. CAUSES OF URBAN SPRAWL**

Regardless of the definition, urban sprawl is spreading universally, and an increasing number of cities within the world are sprawling to a more prominent or lesser degree. Today, urban sprawl is a global phenomenon. Factors causing urban sprawl differs according to development level of countries or according to structure of society.

- The various cases of urban sprawl are:

1. Population Growth: The primary and first reason of urban development is increment in urban population. Fast development of urban ranges is the result of two population development components:
  - a. Normal increment in population
  - b. Migration to urban area.

Normal population increment comes about from overabundance of births over deaths. Migration is characterized as the long-term movement of a person, family or bunch to an unused area exterior the community of root. Within the later time, the development of individuals from provincial to urban zones inside the nation (inner movement) is most noteworthy. Although very negligible when compared to international migration.

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International migration includes labour migration, refugees and undocumented migrants. Both internal and international migrations contribute to population growth.

2. Commercial factors: Asset utilization is implied nothing when it comes to the commercial. Development cost for the new construction is less than to redevelop the old infrastructure. New improvement outside the city on cheaper agricultural land is more beneficial for the developers. Tenant to these regions moreover discover them more economical therefore this chain of generation and utilization is kept up.

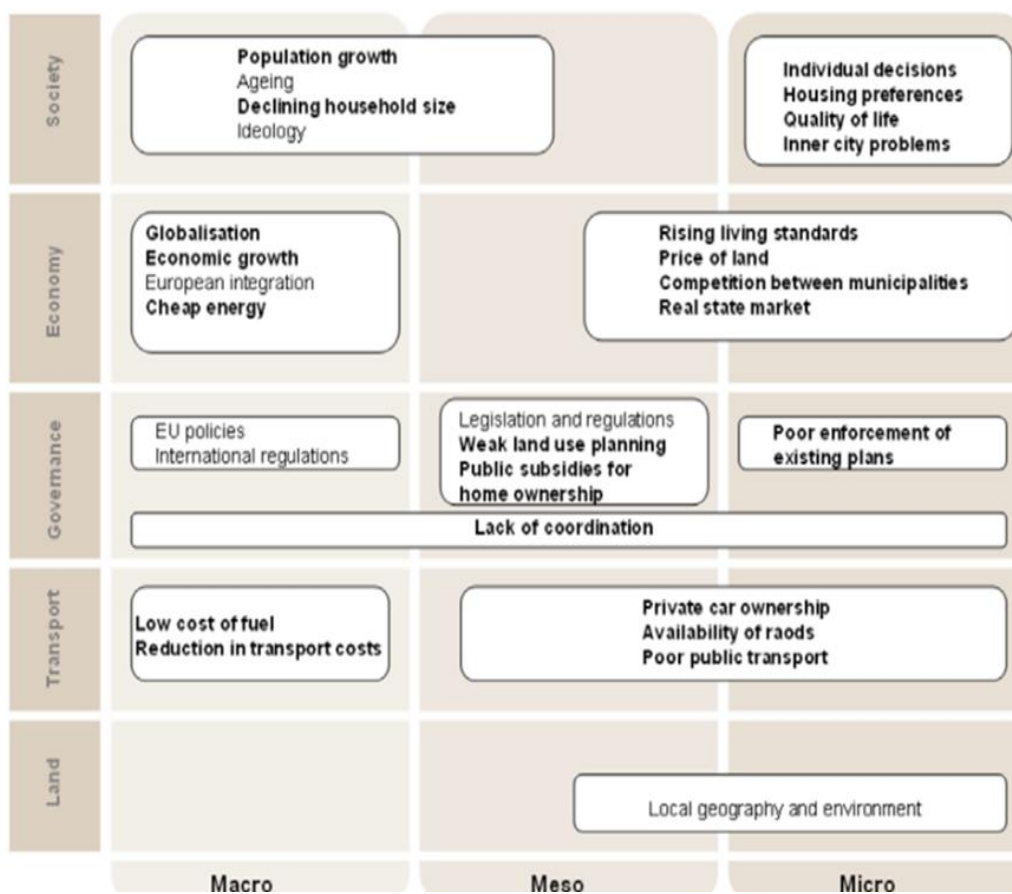
3. Transportation: A great transport arrange is must for development of a city. In any case, this improvement of transport extraordinarily causes urban sprawl. Since, the sprawl is car subordinate, the development of interstates encouraged development of individuals from more distant to city, in this way opening these ranges for private improvement. Thus, encourage the sprawl.

4. Changing way of life: With the innovation playing its part it too satisfies to the individuals to discover their life on outskirts. Living in densely populated area is being avoided. Easy transportation methods, infrastructure and connectivity through web never makes them to miss on the city life in the suburbs. Thus, increasing the sprawl on the outskirts of urban area.

5. Government approaches: Government approaches are critical cause of urban sprawl. In creating nations, the government arrangements have contributed altogether to quick urbanization in expansive cities causing urban sprawl.

6. Inner city problems: Problems such as lack of open space, poor air quality, constant noise pollution, poor condition of existing structure, high price of land in the city encourage people to live on the outskirts of city and promote formation of sprawl.

- Institute of Transport Economics, Norway has given drivers for urban sprawl. They show both horizontal and vertical drivers, and drivers connected to five subjects



**Figure 1: Drivers behind urban sprawl (ESPON 2010:22)**

- According to EEA Report No 10/2006, urban sprawl on Europe, they had given drivers of



**Figure 2: Drivers of urban of sprawl (EEA Report No 10/2006)**

### **III. IMPACT OF URBAN SPRAWL**

The places of sprawl and the locale that's affected by it are distinct from each other. When sprawl takes put at the fringe of a certain city it might have its direct or indirect effect on other parts of the city inside its regulatory border or on a neighbouring city. For the most part, two conflicting views are taken around the results or impacts of sprawl. On one hand some authors contend that it is hurtful and solid measures ought to be taken to battle it, others support and indeed energize it. Urban sprawl may have both positive and negative results and impacts; but, negative impacts are regularly more highlighted as usually an uncontrolled or uncoordinated development and inevitably the negative impacts destroys the positive sides. There are a few positive impacts of urban sprawl, like increment in financial generation, increment in opportunities for work, superior openings and way better administrations making superior living conditions. Urban sprawl can expand superior essential administrations, foundation as well as social capital such as transportation, sewer, and water, superior instructive offices, wellbeing care facilities to a bigger population. In any case, since it is an uncontrolled and unplanned growth resulting in sprawl, the positive effects are concealed welcoming spotlight just on the negatives. Major results of urban sprawl can be outlined as follows:

1. Economic Impacts:

From an economic point of view urban sprawl is at the very slightest a more costly form of urban development due to:

- expanded family investing on commuting from domestic to work over longer and longer distances
- the cost to business of the congestion in sprawled urban areas with inefficient transportation systems

- the extra costs of the expansion of urban infrastructures counting utilities and related services, over the urban locale.
2. Ecological Impacts:
- Land consumption: The sum of open space utilized by each occupant has expanded in the last 20 years by two or three times.
  - Energy consumption: The level of gas utilization can be utilized as a parameter of the level of car utilize.
  - Atmospheric pollution: The level of contamination due to motorcar reliance can more easily be associated to populace densities.
3. Impact on wildlife and ecosystem:
- The reach of urban sprawl into country common ranges such as woodlands and wetlands position as one of the essential shapes of natural life environment misfortune. Streets, power lines, subdivisions and pipelines frequently cut through characteristic ranges, subsequently dividing wildlife habitat and modifying natural life development designs, the fracture of an expansive woodland into smaller patches disturbs environmental forms and decreases the accessibility of living space for a few species. Some woodland parts are as well little to preserve reasonable breeding populaces of certain wildlife species.
4. Impact on Health:
- Respiratory infections; asthma
  - Injuries from pedestrian unfriendly roads
  - Social isolation and age segregation
  - Anxiety
  - Increased blood pressure
  - Headaches
  - Road rage
  - Stress

### 3.1 Case study of Lucknow city

Lucknow lies between the coordinates of 26° 30' N to 27° 10' N latitudes and 80°30' E to 81°13' E longitudes. It is the capital city of the state of Uttar Pradesh in India. [1]



Figure 3: map of Lucknow city

Source: google maps

As shown in Table 1, “the rate of population change is high although smaller than the increase in urban land. The study reveals that the increase in urban area was recorded twice in year 1991 and about thrice in 2001 since 1971. The rate of land consumption for urban purposes was substantially moderate till 1980’s but in year 1990’s it witnessed a sharp increase that is 81.83 per cent in land consumption as compared to population growth. As it is often the case, the lack of urban planning forced immigrant to settle in the periphery of the city where land and accommodation prices were much lower than in the city centre. The economic factor or the differential land rents thus appears as a major driver of urban sprawl in Lucknow city”. [1]

Year	Population Lucknow Agglomeration	Population Increase in (%)	Municipal Corporation	Population Increase in (%)	Area	Increase in Area
1971	813982	-	774644	-	80.00	-
1981	1007604	80.78	947990	81.71	130.11	61.4864
1991	1669204	60.36	1619115	58.55	159.00	81.8301
2001	2245509	74.34	2185927	74.07	212.24	74.9152
2011	2880108	77.97	2817105	77.59	304.00	69.8158

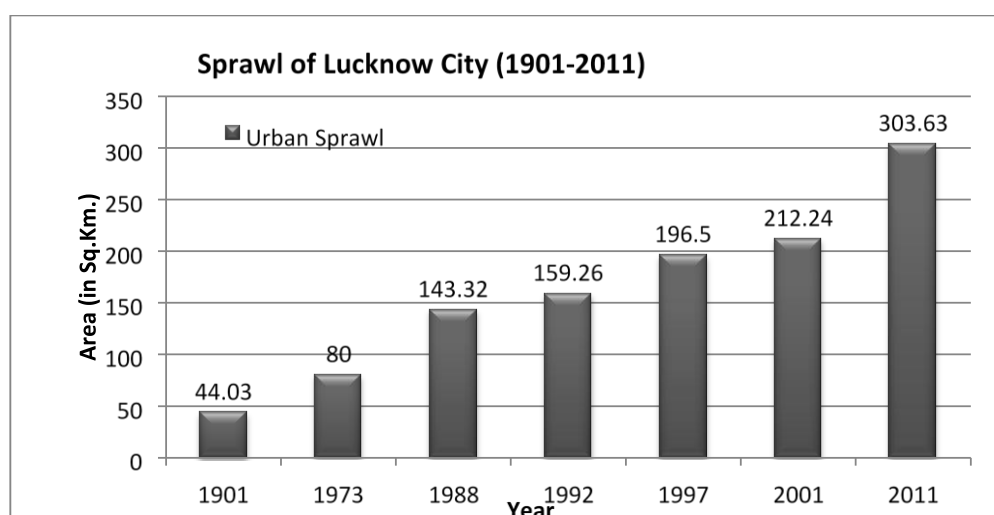
**Table1: increase in population and growth in areas [1]**

Lucknow is urbanizing at rapid rate and has become a large interconnected urban complex. [1]

Year	Area in Sq.km.	Annual Growth Rate in %
1901	44.03	-
1961	79.16	1.32
1974	80.00	0.08
1986	132.75	5.49
1988	143.32	3.98
1992	159.26	2.78
1997	196.50	4.67
2001	212.24	2.00
2005	243.80	3.72
2011	304.00	4.12
*2021	414.34	3.62

**Table 2: area of sprawl in Lucknow city [1]**

Source: Compiled from various historical maps, SOI Toposheets and Census



**Figure 4: sprawl of Lucknow city [1]**

From the above data it is clearly seen that area of sprawl is increasing as increase in population and growth rate of area. Which is compromising the proper land use of the city and become major factor in spreading sprawl throughout the city.

#### **IV. METHOD OF CONTROLLING URBAN SPRAWL:**

1. Special guidelines can be developed for areas where urban expansion processes can be identified, covering various local governments.
2. Essentially, it would be helpful to present more prominent restrictions on land-use, particularly in small towns found close expansive cities or metropolitan regions that have natural assets of interest.
3. Urban mobility model supported by public transport to restrict the use of private vehicles.
4. Government should promote development in the middle of cities, so people would not rush to outskirts of cities.
5. It is vital to form urban open spaces that encourage interaction. Green spaces ought to be promoted since they make cities more appealing and associated with the common environment; however, it is additionally critical to preserve development thickness and clear urban limits.
6. Statistic and financial projections ought to be considered in urban plans so that unjustified expansions due to endogenous dynamism are not promoted.
7. It is advisable to modify the local financing system so that it does not generate incentives for scattered growth or urban development in leaps and bounds. Construction fees should be introduced that include the environmental cost of single-family homes or the provision of services in dispersed environments.
8. Creating urban boundaries in the edge of cities will control urban sprawl.
9. Support smart growth strategies for development and redevelopment built up area in a city.
10. Betterment of low-income household's living conditions by paying financial credits, preparation of affordable housing and regional subsidies are some solutions for improving their living condition.

#### **V. CONCLUSION**

After the study of various research papers and review articles it is clear that, what are the causes behind the formation of urban sprawl. Moreover, it has come to light that urban sprawl have more negative impact which can not only harm nature but which can have adverse effect on the health of the human being. After seeing the case study of Lucknow city, it is clear that if sprawl is not controlled it can change the aspects of the city which may be irreversible, therefore it should be allowed to exists. Lastly, some method controlling urban sprawl is discussed. Thus, it is seen that urban sprawl is a threat and it should be eliminated by taking various measures implementing various policies.

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