

Causes of Urban Sprawl: A comparative study of Developed and Developing World Cities

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ABSTRACT

The urban population of the world is increasing rapidly. This rapid increase of population is causing urban sprawl especially in the cities of developing world. Urban sprawl is mostly a result of unplanned, unorganized and haphazard urban development. It is an undesirable form of urban development as it is unsustainable. The present paper analyses the causes of urban sprawl so that urban sprawl could be checked and managed at the right time. The study reveals that causes of urban sprawl in the cities of developed and developing world is quite different. It has been found that in developed world sub-urbanization is a major cause of sprawl whereas in the developing world, uneven/regional disparities in development, rapid urbanization and emergence of cities as islands of development are major cause of urban sprawl. A survey carried out in Noida city in Uttar Pradesh confirms that cause of urban sprawl in developing world is different from developed world.

1. Introduction

The term 'urban sprawl' came into prominence around 1950s when urban settlements in USA started extending rapidly outwards. This rapid extension of urban areas was at the expense of agricultural and forest land resulting into change of land use from agricultural and forest to built-up. The outward expansion of urban settlements were auto dependent. This type of new urban development brought negative externalities as it was characterized by inefficient use of resources. This pattern of urban development out of control has been termed as urban sprawl (Zhang, 2004).

In general, urban sprawl is a term which denotes unplanned or poorly planned, uncontrolled and uncoordinated expansion of low density urban land uses into agricultural and forest areas. It is characterized by auto dependent unlimited outward expansion in the forms of leapfrog, radial and ribbon development. The term 'sprawl' is often used pejoratively because of negative externalities associated with it. Sprawl is different from urban growth as sprawl is a form of urbanization that is unsustainable (Sinha, 2017).

2. Review of Literature

Galster et al. (2001) have argued that the pattern and process of sprawl is to be distinguished from what causes it or what it causes (consequences). Urban sprawl as a phenomenon came to prominence in the later half of 20th century. Most of the researchers have opined that the major cause of sprawl has been urban population growth, government policies, growth of highway system, widespread use of automobiles, economic prosperity and democratization of society (Kaiser and Weiss, 1971; Pendall, 1999; Harvey and Clark, 1971; Ewing, 1994; Morill, 1991; Harvey and Clarke, 1965; Burchfield et al., 2006; Squires, 2002). Torrens (2006) has listed a number of causes that have contributed to sprawl development in the context of United States such as population growth (absolute growth, increasing urbanization and restructuring in the dynamics of household development),

the weakening of downtowns pull on locations by the growth of highway system, diffusion of industry to suburbs following its labor forces and pursuing cheap land and easy access to an expanding network of inter-state highways, dramatic growth in the use of automobile and the dominance of its position in American society. He also considered sprawl from the perspective of the agents of change-households, employee, developers and planners and policy makers. Bruegmann (2005) argues that notions that sprawl was caused on widespread use of automobiles (as sprawl predates the automobile) or by American tax policies, or by anti-urban attitudes or by racism are inadequate. To him sprawl "seem to have been a logical and perhaps even predictable result of increasing wealth and democratization of society. In this process many more citizens have obtained the ability to exercise the choices that once were the sole prerogative of the wealthy and powerful".

Bhatta (2010) has listed a number of causes responsible for urban sprawl. Siedentop (2005) cites demand for urban land and urban planning as two major causes of sprawl. Gordon and Richardson (1997) also talk of natural economic factors causing sprawl.

A number of studies have found that rapid urbanization and migration are most important cause of urban sprawl in Indian cities (Sudhira et al, 2004; Malik et al., 2013; Tyagi, 2015). Sinha (2017) in his study on urban sprawl in Gautam Buddha Nagar district has found that backwardness and lack of employment opportunities in rural areas and small towns is the biggest cause of migration to urban settlements which causes urban sprawl. The other important cause of migration to Noida were availability of job/income opportunities, nearness to Delhi and lower rental values. Sinha and Shekhar (2017) found push factors to be more important cause of outmigration. They found that although most of the migrants end up with low paid jobs and often denied of even basic amenities, yet they prefer to migrate to large cities in the hope of a better future.

The review of literature in the field indicates that there is large volume of work and in-depth study on the causes of urban

sprawl in USA and other developed world cities, but there is general dearth of literature on the causes of urban sprawl in Indian or developing world cities.

3. Objectives

1. To understand the causes of urban sprawl.
2. To compare the causes of urban sprawl between developed and developing world cities.

4. Database and Methodology

The study is primarily based upon secondary sources of information i.e. studies on urban sprawl. However, in order to compare and contrast causes of urban sprawl between

developed and developing world cities, primary data were collected through questionnaire survey and key informants' interview in Noida city of Gautam Buddha Nagar district in Uttar Pradesh (Sinha, 2017).

The survey was carried out in the month of July and August, 2016. A total of 240 households (30 households in each locality) were surveyed from eight selected localities with the help of stratified random sampling technique. Eight localities in Noida were selected for survey based upon the criterion of density and year of development (Table 1).

Table1: Localities selected for primary survey in Noida

Category of Localities	Before 1991	1991-2000	After 2001
Slum	Sector 10	-	-
Urban village	Mamura and Chalera	-	-
High Density	Sector 12	-	-
Medium Density	Sector 26	Sector 44	Sector 52 and 105

In each selected localities, four to five persons who had good knowledge of their locality were extensively interviewed to know their response with respect to problems and development of their area. The interview of key informants gave useful insight into the functioning of system, developmental issues, and people's perception with regard to urban amenities and local governance.

5. Causes of Urban Sprawl

From review of literature, it is clear that there are large number of factors which causes urban sprawl. Some of the important factors causing urban sprawl is discussed below.

- Population Growth:** one of the most important reasons of urban sprawl, especially in the developing world countries, is rapid growth of urban population. The growth of urban population is a result of natural increase in urban population and migration to urban settlements. The rapid growth of urban population in developing countries is primarily because of rural-urban migration i.e. rural population migrating to urban settlements. Another important trend observed in the developing countries is that population of large cities is increasing at alarming rate whereas small and medium towns are either stagnating or even declining. This implies that in large cities not only people from rural areas are migrating but also people from small and medium towns are migrating to the large cities. Consequently, the population of large cities are increasing very rapidly and city planning very often fails to plan for this ever-increasing population which leads to unplanned and unorganized outgrowth of the city.
- Uneven/Regional Disparities in Development:** There is wide inequality in the level of development between rural and urban areas, small/medium towns and large cities and backward and developed regions. The economy of villages, small/medium towns, and backward regions are stagnating; there are not much

income/employment opportunities and these areas lack even basic amenities. This situation has generated strong push factors in the above-mentioned regions as people have no hope of better future. On the other hand, large cities have emerged as island of development and engines of growth and offers various economic and social opportunities to migrants. Large number of studies have found that major streams of migration originates from backward areas of the country. Thus, people move to large cities where most of them land up with low income jobs in unorganized sectors. But they decide to migrate because at least they have hope of better future in the large cities.

- Economic Growth:** Economic growth is another important cause of urban sprawl. The increase in income and increase in number of employed people through economic growth creates demand for housing as well as better housing with more living space on better location. In USA, the phenomenon of urban sprawl came to prominence as people started moving to outskirts of city where they could afford large single dwelling units due to increase in income level. The result was low density development in the fringe zone of city causing urban sprawl.
- Transportation:** A good transport network is a must for economic growth of a city. However, this development of transport specially the expressways and highways cause urban sprawl. In USA, the massive building of highways caused urban sprawl as it connected the outlying areas with the city. Since, the sprawl is automobile dependent, the construction of highways facilitated movement of people from farther distance to city, thus opening these areas for residential development. In developing countries also, construction of highways and major roads have caused urban sprawl along the roads, i.e. ribbon sprawl.
- Government Policies:** Government policies are important cause of urban sprawl. The emergence of urban sprawl as a major form of urban development

was caused in USA by a federal legislation in 1940s and 1950s providing low cost builder and buyer housing, and to a massive highway construction programme due to which living away from city, jobs and activities becomes easier. In developing countries, the government policies have contributed significantly to rapid urbanization in large cities causing urban sprawl.

- vi. **Affordable Housing:** The land and property cost in city is quite high which a large section of population can not afford. On the other hand, the property cost outside the city limits is low. Therefore, people who can not afford to buy a home in the city settle down in the sprawl area. Also, people who desire larger living space gets attracted to this zone as it provides affordable housing.
- vii. **Speculation:** People or even government agencies hold land as they speculate to get higher prices for the land in timesto come which very often leads to leapfrog development, a form of urban sprawl.
- viii. **Consumption of Black Money:** In developing world, a large number of people find it easy to dispose of their black money by buying flats/land. These flats remain unoccupied for a long time, thus contributing to urban sprawl.
- ix. **Credit and Loan Facility:** The availability of loan facility specially at cheaper rates spurts demand for housing, thus causing sprawl.
- x. **Nuclear Family:** The nuclear families generate more demand for housing in comparison to joint family. Also, the requirement of per capita living space is more as compared to joint family. Thus, nuclear family system generates demand for more houses as well as more living space.

Besides the above-mentioned factors, there are many other minor factors such as independence of location, land buyer attitude, legal disputes, physical aspects, development and property tax, public regulation, road width, failure to enforce planning policies, large lot size, county living desire, etc. (Bhatta, 2010).

6. Urban Sprawl in Noida

A survey was carried out in Noida city of Uttar Pradesh in the year 2016. One of the objectives of survey was to understand the causes of urban sprawl. The city of Noida having an area of 20,316 ha lies entirely within the district of Gautam Buddha Nagar sharing its boundary with Delhi in the west. The city is located in the Yamuna basin in the area between River Yamuna and Hindan. The area is an almost flat alluvial plain with a gently sloping surface from north-east to south-west. The city of Noida was developed under the policy framework of National Capital Region (NCR) plan which aimed at stopping congestion in Delhi by preventing in-migration. Thus, to divert population to Noida destined for Delhi, alternative planned residential and industrial site was provided to people at much lower price compared to Delhi. Proximity to Delhi, cheaper land, and planned development of city has led to emergence of Noida as one of the fastest growing cities where population is doubling every decade since 1991 and is projected to keep doubling till 2031. The population of Noida was 1,46,514 in 1991 which increased to 3,05,058 in 2001. It further increased to 6,37,272 in 2011 and as per Noida Master Plan-2031, its population is projected to reach 25 Lakhs. The result of survey is presented in Table 2.

Table 2: Distribution of Households on the Basis of Nativity and Native Place (in per cent)

Localities	Native of Noida		Native place			
	Yes	No	UP	Bihar	Delhi	Others
Mamura	13.33	86.67	46.67	26.67	0	13.33
Sector 10	0	100	76.67	16.67	3.33	3.33
Sector 12	16.67	83.33	56.67	3.33	6.67	16.67
Sector 26	23.33	76.67	20	13.33	13.33	30
Sector 44	20	80	26.67	13.33	33.33	6.67
Sector 52	13.33	86.67	33.33	16.67	30	6.67
Chalera	16.67	83.33	43.33	36.67	0	3.33
Sector 105	0	100	40	46.67	0	13.33
Total	12.92	87.08	49.28	24.88	12.44	13.4

As per questionnaire survey result, backwardness of the area is the major driver of migration as one can see large number of migrants from Bihar (24.88 per cent) which is farther away in comparison to Haryana (3.87 per cent) which shares its boundary with Noida. Almost all families (87.56 per cent, excluding Delhi) who migrated to Noida came to city due to availability of job/income opportunities. Nearness to Delhi and lower rental values were other important consideration for them to migrate to Noida. This reveals that major stream of migration to Noida has been from backward areas of country and economic opportunities and proximity to Delhi being the most important motive of migration.

The main reason of families which shifted to Noida from Delhi was lower land value in Noida in comparison to Delhi. These families were not able to buy a house in Delhi because of exorbitant land values. They were able to purchase a house in Noida. So, having their house was the major consideration for most of the families migrating from Delhi. Another important consideration was location of their work place in Noida.

Key informants revealed that employment opportunities created initially through industrial development, cheap land and proximity to Delhi were main reasons for people to migrate to

Noida. Later on, planned development of the city specially infrastructure development (road, electricity, water, sewerage, housing etc.) by the Noida Authority made Noida more attractive to migrants. The diversification of economic activity, development of health and education sector, availability of affordable housing through Noida Authority and private builders have helped Noida to emerge as a vibrant city and strengthening of pull factors for migrants.

Thus, the survey reveals that backwardness of source regions of migrants, employment/income opportunities, proximity to Delhi, availability of cheap land, planned development, availability of affordable houses built by Noida Authority and private builders and credit facility at cheaper rates are main causes of urbanization and urban sprawl in Noida.

7. Urban Sprawl- A Comparative Analysis of Developed and Developing world Cities

The above description of causes of urban sprawl reveals that there is marked difference in the causes of urban sprawl in cities of developed and developing world. In the developed world cities, major cause of urbanization has been desire for better housing, better living condition, availability of cheaper land in the sprawl areas, construction of highway, cheaper loans, large lot size, development and property tax, public regulation and choice of residence enabled by democracy. The causes and process of urban sprawl in developed world cities is best exemplified in suburbanization development.

Sub-urbanization is a process through which suburbs gets developed beyond the edge of a city. A suburb is an outer district lying within the commuting zone of an urban area. The process of suburbanization became an important trend in United States somewhere in the middle of 20th century. This was due to change in public preference from urban to suburban living. This was caused by federal legislation in 1940's and 1950's providing low cost builder and buyer loans, and to a massive highway construction programme due to which living away from city, jobs and activities became easier. In due course of time, suburban lifestyles became the preferred lifestyle of most of Americans. This has resulted into sub-urbanization, i.e. moving from city to suburbs. Urban sprawl is one of the spatial patterns that has emerged out of this process of suburbanization in the Developed World.

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The causes of urban sprawl in developed world reflects operation of centrifugal forces which leads to out-migration from city. On the other hand, centripetal forces are quite strong in developing world cities and cities remains the preferred place for living. The major cause of urban sprawl in developing world has been rapid urbanization, uneven development, affordable housing, income/employment opportunities, inadequate infrastructure, unplanned or poorly planned urban development and poor implementation of developmental plans. The planning process is unable to plan for future as problems arising out of rapid urbanization reduces the planning exercise to by and large crisis management.

Thus, the major causes of urban sprawl in developing and developed world is quite different. Large number of studies have been carried out on causes of urban sprawl in the cities of developed world but the studies on developing world cities are quite less. Therefore, there is a need to carry out more studies on developing world cities in order to understand the causes of urban sprawl to check and manage urban sprawl for sustainable development of cities.

8. Conclusion

The study analyses the causes of urban sprawl which is an unsustainable form of development. The major causes of urban sprawl are urban population growth, regional disparities in development, economic growth, transportation, government policies, affordable housing, speculation, consumption of black money, credit and loan facility and nuclear family.

It has been found in the primary survey carried out in the Noida city of Uttar Pradesh that rapid urbanization, regional disparities, employment/income opportunities, proximity to Delhi, availability of cheap land, affordable housing and credit facility at cheaper rates are the main causes of sprawl in the city. A comparison of urban development of cities of developed and developing world reveals that the causes of sprawl in the two regions are strikingly different, and therefore, different strategies are needed to tackle the problem of urban sprawl. As there is general dearth of work in this field on cities of developing world, more work is desirable to understand the causes of sprawl in the cities of developing world comprehensively.

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