



The concept of urban sprawl its causes and impacts

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Abstract

The history of urbanization is still unwritten, with only a small part of the initial work done. The history of urbanization dates back to the ancient period of the origin of cities (known as the first phase of urbanization in the world). Over this long period, what was observed was the growth of small port/rail-based cities from the ancestral form (village) and the present-day cities with skyscrapers. By the end of the 20th century, urban development was rapidly pushing cities further and further out and cities were expanding spatially, while in the 21st century the automobile revolution changed the dominant form of city life. This sprawling form of low-density city on the periphery is sometimes called sprawl. Since sprawl is a name for a number of conditions, there is no clear consensus about what exactly 'urban sprawl' is or how it occurs. Although many scholars have tried to come up with an explanation of the term, the central component of most definitions and most people's understanding of sprawl is this: sprawl spreading out from a city and its suburbs to more and more rural land in the periphery urban area. It involves the conversion of open space (rural land) into built up, developed land over time.

Keywords: sprawl, urbanization, ribbon sprawl, leap frog development sprawl

Introduction

Urban growth is an important factor in expansion – as cities get bigger, they tend to expand around their periphery. But dispersal is more specific in nature, defining it as 'disorganized development': the expansion of a community without real concern for the consequences of poor environmental conditions or environmental impact. Urban sprawl is also known as 'horizontal sprawl' or 'scattered urbanization'. Urban sprawl is characterized by uncontrolled and disproportionate expansion, low density, poorly planned patterns of development in rural areas surrounding an urban area. Appearing in both high-income and low-income countries, urban sprawl is often characterized by a scattered population, who live in isolated residential areas, with long blocks of homes and poor access, often overpopulated. Depends on motorized transport and is missing space. Well defined centers of commercial activity. (UNICEF, 2012) 'Spell' is also a highly political term, creating debate over the loss of agricultural land and wildlife habitat, the cost of automobile use, and appropriate design and policy solutions (Duney, Platter). -Zyberk & Speck, 2000). It is also described as scattered, low-density development at the edges of urban areas, characterized by fragmented and ribbon development. It is often associated with edge cities and hazy, car-oriented and functionally isolated landscapes. Although sprawl is often associated with a lack of planning or a failed planning mechanism, there are some authors who suggest that important government policies and public agencies, influencing decisions about road construction, housing financing, and zoning, have led to large cities. (Wolch, Pastor & Dreyer, 2004). In most cases, urban sprawl is considered one of the major effects of urban development.

Objectives

1. To understand the process of urbanization resulting in the creation of urban sprawl.

2. To understand the factors leading to urban sprawl.

Data base and research methodology

The present study is based entirely on secondary data. Therefore, the required data is collected from various researches, books, articles and published journals on the above subject. In the present research I have tried to evaluate the causes, effects.

Urban sprawl is classified into three types which are as follows:

Sprawl with low density

The sprawl with Low-density is a continuous sprawl which is caused by spreading outwardly towards low-density suburban land with low density of population which make use as currently experienced by numerous of cities of United States of America as their population, turning larger size and there is no dearth of availability of land. This is highly consumptive land use for the development of urban areas and supported by piecemeal fashion for developing the basic amenities and services and other urban infrastructure, including water, sewer, drainage system, power and roads and pavements.

Ribbon sprawl

Ribbon sprawl is a type of urban sprawl which is characterized by development concentration along with the major transportation arteries, primarily roads. On the other hand, the developments which are developed on land adjacent to the major roads, areas with inaccessibility to the roads which tends to remain as green areas, likely to be converted into the urban land uses on enhancing the land values increase, as a result, from the major roads, the infrastructure is extended.

Leap frog development sprawl

Leap frog development sprawl is a scattering pattern of

urbanization with disjointed patches of urban land uses, interspersed with green areas. Leapfrog development. It is because of some of physical limitations; including prohibitive topography, located wetlands and water bodies or the other factors such as differences in development policies between the political jurisdictions. This Urban sprawl phenomenon takes place, when the developers construct new residential areas which are located from the existing urban areas with low level of connectivity, shown in case of leapfrog patterns.

Hence, it is obvious that the urban sprawl is caused by several factors which affect directly or indirectly to spreading the urban population in the haphazard way, in the rural-urban fringe areas, as we notice in the NCR regions of Haryana and Uttar Pradesh.

Reasons for the Development of Sprawl

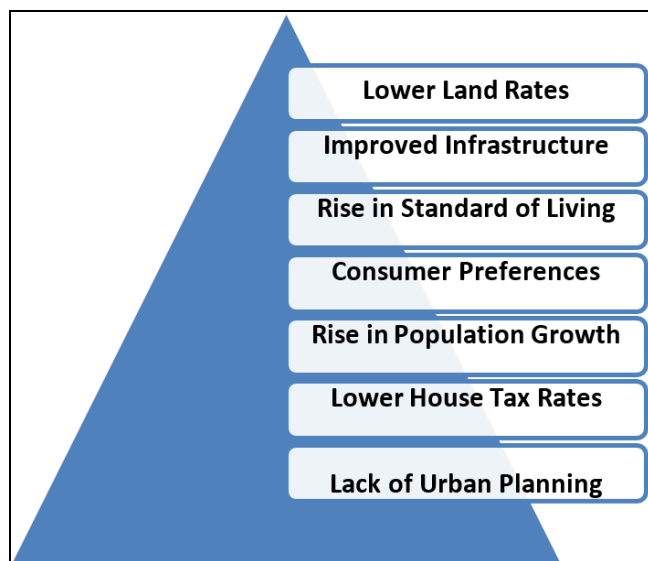


Fig 1: Causes of Urban Sprawl

Low land rates

Low cost land and houses in the outer suburbs of cities, as centers of urban development have actually made people stop settling in these areas and want to venture further.

Improved infrastructure

There has been an increase in spending on certain types of infrastructure, including roads and electricity. This is something that hasn't always been available, and there are still some areas that don't have these luxuries. That doesn't mean they aren't working on it.

Increased standard of living

Standards of living and average family income have also increased, meaning people have the ability to pay more to travel and travel long distances to work and back home.

Lack of urban planning

People like to find areas that are less trafficked and more quiet, which prompts them to move to other parts of the city. Unprecedented development, felling of trees, loss of green cover, long traffic jams, poor infrastructure force people to move to new areas.

Lower house tax rates

Cities will generally have higher property taxes, and you

can usually avoid these taxes by living in the outer suburbs as taxes are usually lower than in other situations.

Increase in population growth

Another factor that contributes to urban sprawl Population growth is an increase. As the number of people in a city exceeds capacity, local communities continue to spread far and wide from city centers.

Consumer preferences

People in higher income groups have a higher preference for larger homes, more bedrooms, larger balconies and larger lawns. It also causes urban sprawl as this option is not available in congested cities. People generally look for low density residential areas where they can get the house of their choice.

The causes and catalysts of urban growth and sprawl discussed by many researchers can be summarized as follows (for general discussion refer to Birchfield *et al.* 2006; Squires 2002; Harvey and Clark 1965). Bhatta (2010) has illustrated twenty-five different reasons for the growth of urban sprawl.

Effects, Impacts and Consequences of Urban Sprawl

The sites of spread and the areas affected by it are different from each other. When spread within the periphery of a certain city, it can have a direct or indirect effect on other parts of the city within its administrative limits or on a neighboring city. Generally, there are two conflicting views about the consequences or effects of dispersal. On one hand some authors argue that it is harmful and strong measures should be taken to fight it, others support and even encourage it. Urban sprawl can have both positive and negative consequences and effects; But negative influences are often more exposed because it is an uncontrolled or disorganized growth and ultimately the negative influences outweigh the positive sides. There are some positive effects of urban sprawl, such as increased economic output, increased employment opportunities, better opportunities and better living conditions, better services leading to better lifestyles. Urban sprawl can lead to better basic services, increased infrastructure as well as social capital such as transport, sewer and water, better educational facilities, health care facilities to a larger population. However, since it is an uncontrolled and uncontrolled growth that results in dispersal, the positive effects are covered only to draw attention to the negative.

In the nineteenth and early twentieth centuries, in developed countries, urbanization built up and so did industrialization. The additional population from the villages was prompted for a mass movement towards the cities due to the new employment opportunities. Even for the cities, these migrants provided cheap labor for the newly established factories. The conditions are similar in developing countries due to the current globalized scenario and opening up of economies. Large scale investment in cities attracts a large number of migrants from villages who are in search of employment. This creates a large surplus labor force, and as a result, wages remain low. Developed and developing countries of the world differ not only in the number of people living in cities but also in the way they are urbanised. In many megacities in the developing world, urban sprawl is a common problem and a significant number of city dwellers live in slums within the city or on the urban

periphery in poverty and poor environments. Urban services, including running water, sewer, garbage collection, Electricity or paved roads. Nevertheless, cities offer poorer people more opportunities and greater access to resources to change their situation than rural areas.

There is increasing evidence of the environmental impacts of dispersal. Kirtland *et al.* (1994) report that the impact of urban land on environmental quality is much larger than its spatial extent. The consequences and importance of dispersal, good or bad, are assessed on the basis of its socioeconomic and environmental impacts. Often these are overlapping or may have several indirect effects. The major consequences of urban sprawl can be summarized as follows:

Some organizations and planners see sprawl as a sign of economic vitality and not an ecological threat. They claim that for countries with a large land area, such as the US, there are too many farms and open spaces to worry about how much land is converted. They also emphasize the primary advantage of sprawl, which is the decentralization of employment in different parts of a city. He argues that car culture enables people to travel shorter distances and own bigger homes at any given time. Moreover, it is not healthy for people to live in areas of increased density and small meter square space per capita ratio as it creates psychological and health problems. Therefore, he recommends that people live in large plots with their own green spaces away from city centers and work areas.

Ecological Impacts

Land consumption

The amount of open space used by each resident has increased two or three times over the past 20 years.

Energy consumption

The level of gas consumption can be used as a parameter of the level of use of the car. The United Nations and the European Union have adopted this position in favor of compact cities, supported by research (that more dense cities consume the least amount of energy for transportation.

Atmospheric pollution

The level of pollution caused by motorcar dependence can be more easily linked to population density.

Loss of natural resources

All spread leads to the loss of an important limited resource i.e. land. Over the years, dispersal has directly contributed to and resulted in the degradation and degradation of natural habitats such as wetlands, woodlands and wildlife. It has also reduced farmland and open spaces. Water use and energy consumption have increased. Dispersal leads to land-use patterns that are unfavorable to the development of sustainable transport modes and, therefore, increased use of the private car has resulted in increased travel length, congestion, increased fuel consumption and increased air pollution.

It is a threat to the ecology in general. Even though automobile and truck engines have become far cleaner in recent decades, motor vehicle emissions are still a major source of air pollution. As homes and businesses spread further and further apart, local governments are forced to provide widely spaced services and infrastructure leading to higher costs and increased tax burdens.

Impact on wildlife and ecosystem

In areas where dispersal is not controlled, the concentration of humans in residential and industrial areas of dispersal can lead to modification of ecosystem patterns and processes (Grimm *et al.* 2000). Development associated with dispersal reduces not only the amount of forest area (Massey and Moll 1989; Macdonald and Rudell 2005), farmland (Harvey and Clark 1965), woodland (Hedblom and Soderstrom 2008), and open space, but what remains It also breaks it down into smaller fragments that disrupt ecosystems and fragment habitats (Lasilla 1999; MacArthur and Wilson 1967; O'Connor *et al.* 1990). Access to urban sprawl in rural natural areas such as woodlands and wetlands is one of the primary forms of wildlife habitat loss. Roads, power lines, subdivisions and pipelines are often cut off from natural areas, causing fragmentation of wildlife habitat and changes in wildlife movement patterns. Some forest fragments are too small to sustain viable breeding populations of some wildlife species.

Loss of farmland

Urban sprawl and urbanization contribute to the loss of agricultural land and open spaces. In the United States alone, urban sprawl is predicted to consume 7 million acres of agricultural land, 7 million acres of environmentally sensitive land, and 5 million acres of other land during the period 2000–2025 (Burchell *et al.* 2005). Preferred taxation and land use policies work in sync to create financial pressures that prompt farmers to sell arable land to speculators. Low and unreasonable prices of agricultural commodities often result in that it is far more profitable for farmers to sell their land over a longer period of time than to continue farming. Also, thousands of small farms are being demolished for rural housing development. Collectively, these small lots contribute to the loss of hundreds of hectares of productive agricultural land per year. loss of agricultural land

Urban sprawl means not only the loss of fresh local food sources, but also the loss of habitat and species diversity, as farms include plant and animal habitats in woodlots and hedgerows. The presence of farms on a rural landscape provides benefits such as green space, rural economic stability and preservation of traditional rural lifestyles.

Decrease in city productivity

It is an economic theory that productivity increases greatly with intensive growth because ideas move faster when people are in close proximity. But when Jobs moves to the suburbs, people follow him. This can reduce productivity in the city causing social harm. In addition, the authors state that sprawl creates regional imbalances, such as pulling jobs and moving people away from poor communities, increasing inequality. Sprawl also creates a separation of rich and poor or social isolation in general. The problem is not with those who have moved to the suburbs, but with those left behind. Low-income groups are left out in the city because they cannot afford a car-based lifestyle. The role of transportation technology may explain this social fragmentation. The overcrowded and impoverished central cities have become favorable places for crime and social unrest.

Rise in temperature: the creation of urban heat islands

On hot days, urban areas can be 6–8°F (3.5–4.5°C) hotter than surrounding areas, an effect known as an urban heat island (Frumkin 2002). Caused by factors. First, dark

surfaces such as roadways and roofs efficiently absorb heat from sunlight and re-radiate it as thermal infrared radiation; These surfaces can reach temperatures of 50–70°F (28–39°C) higher than the surrounding air. Second, urban areas are relatively devoid of vegetation, especially trees; which will provide shade and cool the air through the evaporator. As urban centers expand, the heat island effect expands in both large geographic extent and intensity. This is especially true if the growth pattern includes extensive tree cutting and road construction.

Decline in air quality

Automobile-dependent lifestyles (particularly those forced by the spread of cars) lead to increased consumption of fossil fuels and emissions of greenhouse gases contributing to urban sprawl. Air quality by encouraging greater automobile use, adding to more air pollutants such as carbon monoxide, carbon dioxide, ground-level ozone, sulfur dioxide, nitrogen oxides, volatile organic carbon and fine particulates. These pollutants can stunt plant growth, produce haze and acid rain, contribute to global warming and cause serious human health problems. Apparently, it seems that low-density urban development or sprawl may provide better environmental conditions and fresh air, but Kahn and Schwartz (2008) found that urban air pollution progresses despite sprawl.

Conclusion

A new development whether planned or unplanned, may arise on vacant land or on land that was previously used for some other purpose. However, in most cases, whenever there is a need, it is the outskirts of the city that provides "unlimited" vacant land as the inner cities usually remain intact. Various conditions are seen to cause dilation. In almost all cases, the increase in population plays a major role as a main cause. Urban sprawl has been recognized worldwide as a problematic aspect of metropolitan growth and development. Growing concern about this issue is shared among planners, policy makers, environmentalists and the public in general.

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