



CHARACTERISTICS OF URBAN SPRAWL: A CROSS-CULTURAL ANALYSIS

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ABSTRACT

Urban Sprawl is generally characterized by discontinuous, haphazard, uncoordinated, unplanned or poorly planned urban development. It is characterized by low density, excessive consumption of land, automobile dependence, separation of land-uses, social segregation and displeasing aesthetics. The present paper tries to understand the characteristics of urban sprawl in different cultural regions (developed and developing regions) of the world. The characteristics of urban sprawl was also studied in Noida city of Uttar Pradesh (India) through a survey carried out in 2016. A comparative analysis of characteristics of urban sprawl in developing and developed world cities reveals that there is significant difference in the characteristics of urban sprawl between the cities of developing and developed world.



KEY WORD: *Urban Sprawl, Cultural Regions, Low Density Development, Automobile Dependence, and Separation of Land-Use.*

INTRODUCTION

Urban Sprawl is a form of urban development which is generally characterized by haphazard, uncontrolled, uncoordinated, unplanned or poorly planned expansion of low density urban land-use into agricultural lands adjacent to city. The Oxford Advanced Learners Dictionary (2005) defines sprawl as “a large area covered with buildings and spreads from the city into the country side in an ugly way.” It is an undesirable form of development because of negative externalities associated with it. Torrens (2006) describes “sprawl as a new form of urbanization with characteristics that are distinct when compared to the urbanization that came before it or the urbanization that is developed under alternative (smart growth) regimes”.

Sprawl is generally regarded as unsustainable form of urban development. Torrens and Alberti (2000) describe the characteristics of sprawl as “relatively wasteful method of urbanization, characterized by uniform low density; it is often uncoordinated and extends along the fringes of metropolitan areas with incredible speed. Commonly, sprawl invades upon prime agricultural land and resources in the process. Land is often developed in a fragmented and piecemeal fashion, with much of the intervening space left vacant or in uses with little functionality. Sprawled areas of the city are generally over-reliant on the automobile for access to resources and community facilities. Aesthetically, these areas are often regarded as displeasing, commonly applied to urban landscape with a baldness of design that robs vast swathes of the city of their appeal”.

LITERATURE SURVEY

A comprehensive survey of existing literature was carried out to understand the characteristics of urban sprawl and why the characteristics of urban sprawl varies in the cities of developed and developing world. While carrying out the survey it was found that voluminous literature is available on the characteristics of urban sprawl in developed world cities, but there is hardly any good work pertaining to India/developing world cities.

Sprawl has been described as “discontinuous development” (Weitz and Moore, 1998), “low density urbanization” (Pendall, 1999), and compared to the disease process calling it a “cancerous growth or a virus” (Dilorenzo, 2000). Harvey and Clark (1971) identified three basic spatial forms: “low density continuous sprawl, ribbon sprawl, and leapfrog development sprawl”. Lessinger (1962) characterizes urban sprawl as “roller-painted across the countryside is often without form, grace, or a sense of community. Planning philosophies aimed to strike down this amorphous creature should only gladden our hearts”.

Hess et al. (2001) have given a synoptic view of the characteristics of urban sprawl. They have categorized sprawl characteristics in terms of – (i). High/inefficient land consumption, low population density (Black, 1996; Downs, 1998; Galster et al., 2000; Harvey and Clark, 1965), (ii). Fringe development (Best, 2000; Downs, 1998; Galster et al., 2000), (iii). Lack of connectivity (Duany and Plater- Zyberk 2001, NRDC 1996), (iv). Leapfrogging; scattered development (Clawson, 1962; Mills, 1981; Gordon and Richardson, 1997), (v). Separation of uses, (Brown et al., 1998; Ewing, 1994, 1997; Galster et al., 2000), (vi). Lack of functional open spaces (Ewing, 1994,1997),and(vii).Aestheticsandarchitecture(Gore,1998;Koffiman,1999; Knustler, 1996).

Kumar et al. (2007) have described the characteristics of urban sprawl as haphazard patchwork of development and Tyagi (2015) as “the haphazard, unplanned patches of development beyond municipal limit”. Sinha (2017) has listed a number of characteristics of urban sprawl in Indian cities.

The literature survey also brings out a need for more studies on Indian cities in this field to understand the phenomenon comprehensively.

OBJECTIVES

- i. To understand characteristics of urban sprawl;
- ii. To analyze the characteristics of urban sprawl in Noida;
- iii. To compare the characteristics of developed and developing world cities.

DATABASE AND METHODOLOGY

The study is primarily based upon secondary sources of information. A primary survey was also conducted in Noida city of Uttar Pradesh in 2016 to analyze the characteristics of urban sprawl in the city. Both primary and secondary sources of information have been used to compare the characteristics of urban sprawl between developed and developing world cities.

Characteristics of Urban Sprawl

Following is the major characteristics of urban sprawl:

- I. Low Density Development: Sprawl area is generally characterized by low density development. It has been found in a large number of studies that density of population decreases away from city center. In the cities of developed world, density of population is abysmally low in the sprawl area. In USA, in the later half of twentieth century the sub-urbanization became quite prominent. Sub-urbanization is a form of urban development where people migrate outwards from the city to the fringe area as living conditions was found to be better in the sprawl area compared to the city. Since the land is cheap in the sprawl area, it is characterized by large lot size, single storey, and relatively large living space compared to city. Consequently, the density of population in the sprawl area is much less compared to city.
- II. Excessive Consumption of Land: Single storey, large lot size with small built-up area, and larger living space – all this leads to excessive consumption of land. Thus, land-use in sprawl area is regarded as quite inefficient and leads to excessive consumption of land. The development is discontinuous, haphazard

and unplanned or poorly planned. This scenario leads to leapfrog and ribbon development which are space consuming forms of spatial development. A large number of studies have revealed that because of these characteristics of urban sprawl the rate of conversion of land to non-agricultural or non-natural uses is far greater than the rate of population growth (Burgess, 1998; USEPA, 2000 and Ewing et al., 2002). Therefore, one of the most important characteristics of urban sprawl is that it consumes excessive amount of land. Rate of conversion of agricultural land into built-up outpaces the rate of growth of population.

- III. Automobile Dependence: Another important characteristic of urban sprawl is the heavy dependence of population living in the sprawl area on private transport. Poor accessibility – difficulty moving among widely separated land-uses makes living in sprawl areas automobile dependent. Massive construction of highways in USA in 1940s and 1950s resulted into an increase in private automobile. This connected city with vast areas lying outside city limits and this transport connectivity facilitated people to move out of the city to the fringe area. Through the expansion of intensive highways system, it became possible for people to live away from city and commute to work place by private automobile. Development of public transport was not possible in the sprawl area of US cities because of low density of population.
- IV. Haphazard and Uncoordinated Development: The control of civil or municipal authority in the sprawl area is either weak or absent; and therefore, development in the sprawl area is not subject to regulations. There is no coordination among government agencies and private players in the development of area. Each player acts according to his convenience and in a way that suits their interest best. At times, a single sprawl area may lie in the administrative jurisdiction of a number of authorities. Enforcement agencies are generally weak in the sprawl area. So even where there is a plan or regulation for the development of the area the enforcement is weak. This again facilitates players to pursue their interest. Consequently, the development of sprawl area is unplanned/poorly planned, uncoordinated, uncontrolled and haphazard coupled with poor implementation of existing public regulations.
- V. Aesthetics: Aesthetically sprawl areas are regarded displeasing. Abrams (1971) characterizes sprawl as “the awkward spreading out of limbs of either a man or a community. The first is a product of bad manners, the second of bad planning”.
- VI. Separation of Land-use: In the developed world cities specially, there is complete separation of land-use in the sprawl area. In the sprawl area, the different land-uses such as residential, industrial, commercial etc. gets located separately and at distance from each other.
- VII. Social Segregation: Another characteristic of sprawl is that it leads to social segregation. People who can afford to build a new house and commute by private automobile move to the sprawl area whereas the poor are left behind in the city. However, this kind of social segregation in the developing world cities is rarely found. In developing world cities, at times there is social segregation of population in the sprawl area in terms of language, religion or income resulting into sectoral development of the sprawl area segregating different ethnic/cultural/economic groups.

URBAN SPRAWL CHARACTERISTICS IN NOIDA CITY, UTTAR PRADESH

A survey was carried out in the year 2016 to study urban sprawl in Noida city of Uttar Pradesh. One of the objectives of the survey was to understand characteristics of urban sprawl in the city (Sinha, 2017). Although, the development of the city is planned, the city exhibits important characteristics of the sprawl largely due to short sighted policies of Noida Authority responsible for the planned development of the city. The major characteristics of urban sprawl in Noida are following:

- I. Low Density Development: Although the development of the city is planned yet the density of population is relatively low. It has been found that Noida till about 2005 was developed at lower density after which the new areas are developed at higher densities. National Capital Region Planning Board also suggested that the city should be planned at higher density than envisaged in Noida Master Plan of 2011 and 2021 (Noida Master Plan- 2031). It has been argued that the city can be planned at a higher level of density of population than being planned now. However, the density of population in

- Noida is much higher than cities of developed world and most of the residential development is compact and multi-storey housing.
- II. Excessive Consumption of Land: Low density development has led to excessive consumption of land. Discontinuous, Leapfrog and Ribbon development also exhibit this excessive consumption and outward expansion.
 - III. Automobile Dependence: The development of the city has been automobile dependent- a major characteristics of sprawl. However, the use of private automobile is because of absence of credible public transport system rather than low density development.
 - IV. Separation of land-uses: Unlike developed world cities, there is no complete segregation of land-uses in Noida. The distance among land-uses is not much. For example, high density residential land-use was planned adjacent to industrial land-use. Mixed land-use development of the city is indicated in Noida Master Plan- 2031.

Thus, Noida exhibits some of the important characteristics of sprawl such as low-density development, excessive land consumption and automobile dependency.

A Comparative Analysis of Developing and Developed World Cities

The above discussion reveals that although there is apparent similarity of sprawl characteristics between cities of developed and developing world but an in-depth analysis reveals significant cross-cultural differences.

Both developing and developed world cities exhibit low density development. However, there is significant difference in the density as density in developing world cities is much higher. The developed world cities are characterized by widely spaced large lot size with small built-up area, single storey, large living space, fragmented development with extensive open space. On the other hand, density in developing world cities is many times higher as housing development generally is compact, small plot size, multi-storied, small living space, with very little space between houses.

Automobile dependence is less in developing world cities compared to developed world cities. Development of public transport in developed world cities is uneconomical thus unfeasible due to very low density of population. In developing world cities, the density of population is high enough which makes public transport system feasible. Here it is the lack of good public transport system because of which people use private transport.

A comparison of the cities of two world reveals that consumption of land is significantly lower and use of land is more efficient in developing world compared to developed world cities. Similarly, separation of land-use and social segregation is much less in developing world cities.

Thus, there exists significant difference in the characteristics of the urban sprawl between developing and developed world cities.

CONCLUSION

The major characteristics of urban sprawl are low density development, excessive consumption of land, automobile dependence, haphazard and uncoordinated development, separation of land-uses and unpleasant aesthetics. Low density development, excessive consumption of land and automobile dependence was found to be characteristics of urban sprawl in Noida. The characteristics of urban sprawl is significantly different in the cities of developed and developing world. The density of population is much higher, consumption of land is less and segregation of land-use is less prominent in developing world cities as compared to developed world cities.

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