



economics of URBAN SPRAWL

KEYWORDS

Urban sprawl, Real Estate, City fringes, developers, property.

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ABSTRACT

Our cities had witnessed a massive growth during real-estate boom in recent past, majorly around fringes. Availability of land and lesser prices per square unit along with higher inflow of finances (either from investors or from end users) were few factors triggering such a growth. Property prices too showed a sharp rise during the boom period especially around fringes. Further, fringe development mainly envisaged residential along with few pockets of commercial sector. The cities expanded around fringes which were some how realizing the dream of developers in terms of their business expansions and profit earning. Also, infrastructure projects and other nodal industries (economy generator) acted like sources of ripple, producing waves of growth and development that affected land value and also showed the direction & pattern of city growth. This paper is an attempt to understand the dynamics of economic interaction with city growth and to envisage fringe development converting urban sprawl in to smart growth with the help of a case study.

2.0 INTRODUCTION

Urban Sprawl is low density, automobile dependent development beyond the edge of service and employment areas. As defined by Theobald in 2001, a dispersed development outside of compact urban and village centers along highways and in rural countryside is defined as sprawl. It is ubiquitous and its effects are impacting the quality of life in every region. In one sense, urban sprawl is just another phrase for "excessive" metropolitan decentralization or suburbanization. Suburbanization occurs over time when a larger percentage of a metropolitan area's residential and/or business activity takes place outside of its central locations. Ed Mills (1999) and Jan Bruekner (2000) discussed the same for America that the process of urban decentralization has occurred in the United States for well over 75 years. In 1950, 57 percent of the population lived in the single central cities designated for each U.S. metropolitan area and 70 percent of the employment in the U.S. took place in these central cities. By the mid-1990s these percentages had respectively declined to 35 and 45 percent. In India too an increased urban population and urbanization is inadvertent supported by an unprecedented population growth and migration. More and more towns and cities loomed with a change in the land use along the highways and in the immediate vicinity of the city. Urbanization is a form of metropolitan growth that is a response to often bewildering sets of economic, social, and political forces and to the physical geography of an area.

Some of the causes of the sprawl include - population growth, economy, patterns of infrastructure initiatives like the construction of roads and the provision of infrastructure using public money encouraging development. The direct implication of such urban sprawl is the change in land use and land cover of the region. Sprawl generally infers to some type of development with impacts such as loss of agricultural land, open space, and ecologically sensitive habitats. Also, sometimes sprawl is equated with growth of town or city (radial spread). In simpler words, as population increases in an area or a city, the boundary of the city expands to accommodate the growth; this expansion is considered as sprawl. Usually sprawls take place on the urban fringe, at the edge of an urban area or along the highways

20th Century suburbanization in America occurred due to population growth, rising incomes, falling commuting costs, and to some extent, changing tastes on where and how people wish to live, work, and shop. Economists point to the fol-

lowing cause and effect occurrences as the primary reasons for greater suburbanization. As population rises in a metropolitan area it becomes increasingly more difficult to locate the same percentage of residential and business activity in a metropolitan area's central places whose boundaries remain fixed. In addition, higher income residents generally demand larger quantities of housing and the inexpensive land to build it on is more likely on the fringe of currently developed urban areas. The construction of federally subsidized highways, and the relatively low private cost of using an automobile to get to work, has further facilitated the 20th Century movement to the suburbs. In addition, many people and businesses prefer a suburban setting; though there is some debate as to whether this preference is at least in part induced by the limited choices provided to them (Ewing, 1997).

3.0 URBAN SPRAWL IN ECONOMIC TERMS

From an economic perspective, the point that further decentralization becomes excessive identifies the occurrence of urban sprawl. According to economists, the least value-laden way to identify this point is when further decentralization imposes greater net marginal costs on everyone in the metropolitan area than if the development had remained more centralized (Gordon and Richardson, 1996; Mills, 1999; and Brueckner, 2000). An economist's definition of these net marginal costs refers to both the additional private costs borne by the individuals and businesses making the decision to locate in the more decentralized location, plus the additional public costs that result from the decentralized location decisions of others. This way of economic thinking can help us to better understand why a household, where the primary and even secondary wage earner works in a central place decides to live in a non-central place. A household makes a residential location decision by weighing the private benefits of a decentralized location (possibly better public schools, cheaper land to build a larger house on, newer infrastructure, neighbors they would rather associate with, closer to public open space, etc.) against the private costs of the decentralized location (longer commuting times, less urban amenities, etc.). In this example, the household determines that the private benefits are greater than the private costs at a non-central location.

In addition, economists are quick to point out that excessive decentralization (or urban sprawl) is the result of numerous individual choices. If we agree that many U.S. households prefer low density living, spatial separation from others with

lower incomes and social status, one-stop shopping, a location near open space; and that travel by private car is faster, cheaper, and perceived as safer from personal attack than mass transit, it is not surprising that many households end up choosing locations on the less developed fringe of urban areas. Given that many residents in a metropolitan area have made these choices, many businesses that choose to produce in a metropolitan area also desire low-density sites spread out across the area for ease of shipping, employee, and market access. In effect, the negative outcomes attributed to urban sprawl can be thought of as the summation of the many social costs and benefits that individuals and businesses have chosen to ignore when deciding upon a location at the urban fringe.

4.0 CAUSES OF URBAN SPRAWL AND NEED FOR STUDY

Further in industrialized countries the future growth of urban populations will be comparatively modest since their population growth rates are low and over 80% of their population already live in urban areas. Conversely, developing countries are in the middle of the transition process, when growth rates are highest. The exceptional growth of many urban agglomerations in many developing countries is the result of a threefold structural change process: the transition away from agricultural employment, high overall population growth, and increasing urbanization rates (Grubler, 1994). The biggest challenge for science, engineering and technology in the 21st century is how to ensure adequate housing, sanitation and health, and transportation services in a habitable urban environment in developing countries. Sprawl is seen as one of the potential threats for such development. Normally, when rural pockets are connected to a city by a road, in the initial stages, development in the form of service centers such as shops, cafeteria, etc. is seen on the roadside, which eventually become the hub of economic activities leading to sprawl. Eventually a significant amount of upsurge could be observed along these roads. This type of upsurge caused by a road network between urban / semi-urban / rural centers is very much prevalent and persistent in most places in India. These regions are devoid of any infrastructure, since planners are unable to visualize this type of growth patterns. This growth is normally left out in all government surveys (even in national population census), as this cannot be grouped under either urban or rural center.

The process of urbanization is fairly contributed by population growth, migration and infrastructure initiatives resulting in the growth of villages into towns, towns into cities and cities into metros. However, in such a phenomenon for ecologically feasible development, planning requires an understanding of the growth dynamics. Nevertheless, in most cases there is lot of inadequacies to ascertain the nature of uncontrolled progression of urban sprawls. Sprawl is considered to be an unplanned outgrowth of urban centers along the periphery of the cities, along highways, along the road connecting a city, etc. Due to lack of prior planning these outgrowths are devoid of basic amenities like water, electricity, sanitation, etc. Provision of certain infrastructure facilities like new roads and highways; fuel such sprawls that ultimately result in inefficient and drastic change in land use affecting the ecosystem. With respect to the role of technology in urbanization, Berry (1990) has illustrated a new linkage between transport infrastructure development cycles and spurts in urbanization. Urban infrastructure development is unlikely to keep pace with urban population growth. Both local environmental impacts, such as deterioration of water quality in streams and an increased potential for harboring disease vectors, and offsite land cover changes, such as the loss of woodland and forest to meet urban fuel wood demands, are likely to occur (Douglas, 1994).

4.0 CASE STUDY

An small area near Jammu is selected for studying the role of economy generator and infrastructure nodes in directing/ attracting development which inevitably become urban sprawl.



Figure-I: Google image of katra town, Date: 2010

Katra- Jammu & Kashmir, India, majorly known as a pilgrimage destination for the devotees of Goddess Vaishno Devi. It is small town with a population of nearly 8000 souls as per census 2001 and an estimated population of around 13,000 souls by 2011 (census data, yet to be disclosed). It is settled in the valley of Trikuta Hills bearing 320 59' & 740 56' as geographical location.

It observes physical barrier from Southwest (Gorge) to North (Hills) direction clock wise This town witnesses an average floating population of 30,000 people with a high of 65 to 70 thousand in peak seasons. It is connected by road from three different directions West (from Reasi), South (from Jammu) & East (from Udhampur). It is proposed to be connected by railways, the project is under construction and the railway station is ready which can be seen in the Google image. As per Katra master plan the major occupation of people is local business establishment like shops (all different kinds), guest houses, restaurants and Hotels. As on today Katra-Jammu highway carry most of the pilgrims to the holy town therefore bus station become first nodal point. Second nodal point is considered as the starting point of the track route to holy cave beyond which no vehicle is allowed. The connection between these two nodal points happens to be the preferred destination for the entire commercial establishment.

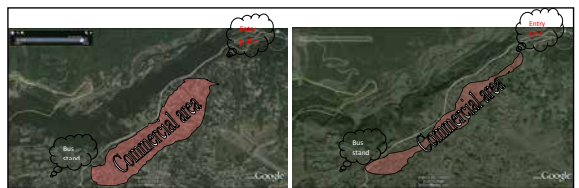


Figure: II Commercial corridors between bus stand and entry gate of shrine in 2010 and 2004 respectively.

With the increase in number of tourist/ visitors and correspondingly increase in the demand of the commodities and goods over a period of time these establishments started spreading around these two nodal points. Since Southwest and North directions has physical constraints therefore the town started growing south and southeast direction as shown in the figure.-I. The extent of development in 2004 is shown in figure – III so that a comparison can be made.



Figure-III Google image of katra town, Date: 2004

The town has grown to a larger extent beyond the municipal

limits. Major development surfaced various hotels and shops along the roads leading to Jammu and Udhampur. However the road towards Reasi (District Head quarter) witnessed less development because of the potential of town growth in opposite direction. The details of development along Katra-Udhampur are shown in the figure below.



Figure-IV Development pattern and intensity in 2010 as compared to 2004 on Katra-Udhampur Road.

As the development captured most of the vacant land and with the increase in the land prices along major roads, the areas between these major roads started building up commercial establishments. Since these areas fall away from municipal limits of the town therefore they witnessed irregular development. Furthermore this kind of growth has engulfed tall the agriculture land in the surrounding which is causing a threat to the environment if not controlled. Had this growth being predicted earlier and proper norms could have been laid to absorb the growth. The town could have been in different stage.



Figure-V: Development pattern and intensity in 2010 as compared to 2004 beyond municipal limits of Katra.

Also if we look at the land prices in the town as on today it indicates the direction and pattern of development. The figure below is based on the primary survey conducted in the town



Figure: VI Land price contour layout of katra town (Intensity of color shows higher prices)

The land use and land prices can be used to predict the pattern of development of the area and from the above figure it is estimated that the areas near railway station will observe a dense commercial growth which can be a mix of shopping arcade and hotels as it is near existing bus station. It is also expected that a considerable number of tourist travelling to Katra will choose railways as the medium of transportation. This change in the mode of transportation will affect the existing nodal point near bus station and a new nodal point will be generated. This creates a new central core of the town as shown in the form of triangular highlighted area. This will have an impact on the further growth and direction of town development.



Figure: VII Indicating development of a new nodal point which will affect the town growth and pattern

5.0 CONCLUSION

Cities have life; they resonate with day to day activities of people. Economic base of the city plays an important role in directing the growth pattern. Like we have seen in case of Katra the economy is based on the tourists' population. Every person arriving at Katra nearly spends 2 days and approximately 500-700 rupees and there are nearly 9.5 million of them visit every year. These numbers of people provide enough funds for development and at the same time these require equal amount of infrastructure also. So it is an opportunity with the local people to develop and challenge to the authorities at the same time. Similarly for any living city Growth is an inevitable part and it will always grow beyond the existing limits of the city. This growth is majorly horizontal because of available resources for development like land at cheaper price, but at the same time cost of laying all the infrastructure lines in this new development is expensive. Therefore we as urban planners are required to predict the growth pattern and plan our cities accordingly so that urban sprawl could be envisaged as smart growth.

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