

A Study on Urban Agglomeration and Health Consequences in India

A.Farhath Anjum, Md Arqam
Research Scholars
Department of Economics
The New College, Chennai

Dr. M. Fakir Ismail
Assistant Professor of Economics
The New College, Chennai

Abstract:- Massive rural-urban migration, natural population expansion, and the increased concentration of new opportunities and services made available in urban regions all contribute to the growth of cities in urban spaces. Cities and towns are appealing to rural dwellers due to the increased work opportunities, advanced educational facilities, less transportation expenses, superior communication facilities, and an overall ambient level of life. There have been a lot of research done in the past about how urban agglomeration affects the environment. Without careful town planning, the demand for urban land has increased significantly along with record levels of migration and population expansion, which has led to the uncontrolled conversion of non-urban and agricultural land along the boundaries of cities. Environmental deterioration as a result has led to a high carbon footprint, the loss of open space, and the destruction of ecosystems that are ecologically sensitive. Urbanisation also brings about profound changes in social organisation and in the pattern of family life. A key outcome is reduced social support so readily available in villages. The rise of nuclear families especially makes urbanites vulnerable to psychological trauma and to mental disorders. These include dementia, depression, substance abuse, alcoholism and family disintegration. A report by World Health Organisation (WHO) titled *The Mental Health Context*, has enumerated that mental disorders account for nearly 12 percent of the global burden of disease. By 2020, these will account for nearly 15 percent of disability-adjusted life-years (DALYs) lost to illness. The incident of mental disorders is highest in young adults, the most productive age of the population. It is estimated that about 150 million people in India are in need of active psychiatric intervention. Given the fertile conditions, Indian cities are likely to have a very large share of this global health challenge in the coming decades. Therefore, this paper discusses the health impacts due to urban agglomeration in India

Keywords:- Urban Agglomeration, Health Impacts, Pollution Management.

I. INTRODUCTION

Urban agglomerations can be defined as contiguously built-up area, shaped by one core city or by several adjacent cities, sharing industry-, infrastructure- and housing-land use with high-density levels as well as embedded open spaces. Urban agglomerations can be addressed in different ways ranging from “large cities,” “urban economic zones,” to

“integrated groups of cities that share a common interest and fate.” Fang and Yu gave a comprehensive overview on the different contexts. Urban agglomeration is a somehow technical term emphasizing extent and morphology. We prefer the term “metropolitan region,” which better labels socio-spatial systems addressing activity and interest sharing of urban actors as well as the drivers, dynamics and functions which result in certain pattern and shape.

A highly developed spatial type of integrated cities is urban agglomeration. It happens when the interactions between cities change from being mostly competitive to being both competitive and cooperative. Urban agglomerations are made up of many cities that are tightly knit together, making them one of the most significant engines of economic growth on the planet. Capital, labour, and information are concentrated in cities. They have long captured the interest of academics from many different fields. In the fields of urban studies and human geography, there is a lot of research being done on the growth, spatial evolution, and spatial organisation of urban forms.

Massive rural-urban migration, natural population expansion, and the increased concentration of new opportunities and services made available in urban regions all contribute to the growth of cities in urban spaces. Cities and towns are appealing to rural dwellers due to the increased work opportunities, advanced educational facilities, less transportation expenses, superior communication facilities, and an overall ambient level of life. People primarily move to towns and cities in the hopes of taking advantage of the work opportunities there and raising their standard of living in this way. However, the process of urbanisation no longer just entails a change in habitat from rural to urban; instead, it has affected social and political interactions at every level, as evidenced by a transformation of urban spaces in the global arena

However, unchecked population growth and underfunding of urban infrastructure and services have led to urban environmental issues in the majority of cities. The frequent migration of people from rural to urban areas, poor housing and infrastructure, lack of urban master plans, unplanned urban growth, deterioration of inner cities, ineffective waste management, emissions from automobiles, indiscriminate eradication of vegetation for personal and societal use, as well as construction, agricultural, and mining activities, all contribute to the problems with urban environment.

II. IMPACT OF URBAN AGGLOMERATION ON ENVIRONMENT

There have been a lot of research done in the past about how urban agglomeration affects the environment. Without careful town planning, the demand for urban land has increased significantly along with record levels of migration and population expansion, which has led to the uncontrolled conversion of non-urban and agricultural land along the boundaries of cities. Environmental deterioration as a result has led to a high carbon footprint, the loss of open space, and the destruction of ecosystems that are ecologically sensitive (McKinsey Global Institute, (2010).

The characteristics of a sprawling metropolis include a segregated pattern of land use, low residential density with a dispersed population, a lack of clearly defined activity hubs, a poorly connected network of roadways, and an excessive reliance on private transportation options (Camagni et.al)

The global experiences of the world's main cities, as correctly noted by Dhanya John, K.M. Francis, and Sabu P.J. (2019), demonstrate that urbanisation has had detrimental ecological and environmental effects during the past few decades. The negative and complicated effects of human activity on the environment ultimately cause problems with the protection and preservation of already-existing environmental goods. India is experiencing urbanisation at a quicker rate than the rest of the world. The main signs of Indian urbanisation are found to be environmental damage, an excessive population, and crowded city life. The government should implement preventive measures and laws that are applicable to all citizens in order to improve sustainable urban development with a focus on environmental protection. The goals of the government's policies should be to achieve a balanced progression of urbanisation, economic development, and environmental protection.

III. URBANISATION IN CHENNAI CITY

Table 1: Area and population of Chennai City, 1901-2011

Year	Area in sq km	Total Population (in lakhs)	Population density (per hect.)	Decadal growth in %
1901	68.17	5.41	80	-
1911	68.17	5.56	82	2.77
1921	68.17	5.78	85	3.96
1931	68.17	7.13	105	23.36
1941	77.21	8.65	112	21.32
1951	128.83	14.27	111	64.97
1961	128.83	17.49	136	22.56
1971	128.83	26.42	192	51.06
1981	176.00	32.84	187	24.30
1991	176.00	38.43	218	17.02
2001	176.00	43.44	247	13.04
2011*	176.00	46.47	264	6.98
2012#	426.00	69.00	162	48.48
2013 - 2014	426.00	70.81	167	2.62

* As per 2011 census; #As per new structure of Chennai City with 200 wards

The population of Chennai from 5.41 lakhs in 1901 with an area of 68.17 sq km and 38.43 lakhs in 1991 with an area of 176 sq km, had rapidly increased to 70.81 lakhs in 2014 with an area of 426 sq km. The decadal growth rate varied from a minimum of 2.62% to a maximum of 64.97%.

IV. HEALTH CONSEQUENCES

The majority of the time, the urban poor are compelled to live in blighted areas. Due to the fact that they are primarily unplanned, they turn into slums that can be considered to be environmentally deficient. They become more numerous as cities get bigger. These are densely populated places with insufficient access to essential utilities like drinking water and sanitation. Their health indices are frequently lower than those in rural regions as a result. Because of their high human densities and poor ventilation, they are more likely to contract contagious illnesses like tuberculosis. It was a disease that was thought to have been fully controlled, but it has

alarmingly returned in slum areas. Water storage that is dangerous and poor waste management, especially in urban poor areas, are linked to vector- and water-borne diseases like dengue. Additionally, due to indoor air pollution and poor sanitation, they are also vulnerable to acute respiratory illnesses and diarrheal disorders.

Surprisingly, slums have begun exhibiting signs of lifestyle disorders like obesity, hypertension, and diabetes in various areas of India. These were referred to be "diseases of affluence" that were not present among urban impoverished people. However, in light of facts coming from slum dwellers, these presumptions must now be reexamined. According to some research, the adult population in slums is around one-fourth obese, diabetic, or hypertensive.

The middle classes currently live fast-paced lives filled with sedentary tasks. Numerous jobs demand irregular hours of work, foster a tense environment, and encourage bad eating

practises. In comparison to other cities throughout the world, Indian cities often have more residents per square kilometre, which results in a lack of public open places for relaxation and exercise. Together, these risk factors put individuals at risk for illnesses including obesity, diabetes, and hypertension. Different types of cancer are also brought on by stress at work, bad lifestyle choices, and contaminated food intake. A million new cases of cancer are reported in India each year, and certain cancer types in particular seem to be gaining ground there. A worrying factor is that a five-fold increase is predicted by 2025.

Urbanisation also brings about profound changes in social organisation and in the pattern of family life. A key outcome is reduced social support so readily available in villages. The rise of nuclear families especially makes urbanites vulnerable to psychological trauma and to mental disorders. These include dementia, depression, substance abuse, alcoholism and family disintegration. A report by World Health Organisation (WHO) titled *The Mental Health Context*, has enumerated that mental disorders account for nearly 12 percent of the global burden of disease. By 2020, these will account for nearly 15 percent of disability-adjusted life-years (DALYs) lost to illness. The incident of mental disorders is highest in young adults, the most productive age of the population. It is estimated that about 150 million people in India are in need of active psychiatric intervention. Given the fertile conditions, Indian cities are likely to have a very large share of this global health challenge in the coming decades.

V. POLLUTION MANAGEMENT PRACTICES

The Ministry of Environment, Forest and Climate Change, Government of India has notified the Solid Waste Management Rules, 2016. As per the rules, solid waste means solid or semi solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste and other non-residential wastes, street sweepings, silt removed or collected from surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste excluding industrial waste, bio-medical waste and e-waste, battery waste, radio-active waste generated in the area under the local authorities. As per the rules, the local bodies are responsible for the collection, treatment and disposal of solid wastes. The Board is the monitoring authority under the said rules and is responsible for granting authorization to local bodies for processing and disposal of solid waste.

In Tamil Nadu there are 12 Corporations, 124 Municipalities and 528 Town Panchayats. In total the solid waste generation is 14,600 Tonnes per day. The Greater Chennai Corporation generates 5000 TPD, 11 Corporation and all Municipalities generates about 7600 TPD and all the town panchayat generates 2000 TPD.

VI. CONCLUSION

The Board is advocating the concept of waste segregation at source, waste reduction, recycle and reuse to avoid any environmental issues during handling.

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