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**THE STUDY OF URBANIZATION AND ITS RELATIONSHIP WITH
SUSTAINABLE DEVELOPMENT WITH SPECIAL REFERENCE TO FEW
INDIAN CITIES**

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ABSTRACT

The driving force behind urbanization in India is the Liberalization Policy of 1991 which expanded the key role of domestic private and foreign investment in the country. Urbanization of cities has been advantages for the country in terms of national income but has also hampered the sustainability hold of the country to a larger extent.

Urbanization provides greater opportunities for Sustainable Development as given that there are large number of people living in small areas having the benefit of housing, employment opportunities, better education system, resource management and much more. However there is still need to realize the full potential of cities for Environment, Economic and Social Sustainability.

The importance of Sustainable Development has been growing with time and mainly due to sudden climate changes and the growing population of the country, the hold of 3 pillars of sustainability must be strong being the need of the hour. India being one of the fastest growing economy is playing a key role in shaping and delivering the SDGs (Sustainable Development Goals) to ensure balance among the three pillars of Sustainable Development namely; Environment,

Economic and Social Sustainability but yet there are some deadlocks of Urbanization that hampers the Sustainable Development of the country which this paper will highlight and give insight of the impact of urbanization on sustainable development of India.

Keywords: Urbanization, Sustainable Development, population, pollution, Environment

INTRODUCTION

Urbanization is a process wherein large number of people lives in small spaces and forming cities. Urbanization in India mainly took place because of migration of people from rural areas to cities for a better standard of living, increase in population and economic growth. As per the Census of India 2011, the definition of urban area is:-

- a) Having a minimum population of 5000,
- b) Density of 400 person per sqkm or more.
- c) 75% of the male population working in employed in non-agriculture activities.

However, it is to be noted that the places that are administered by a municipal corporation cantonment board, notified town area committee are considered as urban areas. As per 2011 Census there are about ten major cities of India namely- Mumbai, Delhi, Bangalore, Hyderabad, Ahmedabad, Chennai, Kolkata, Surat, Pune and Jaipur.

Sustainable Development is the organizing principle for meeting human needs and wants while at the same time sustaining the ability of natural resources which are equally important for our ecosystem and for the future

generation. However, it is important that economic development should take place without depleting the natural resources.

According to World Commission on Environment and Development (WCED) "Sustainable development is development that meets the needs of present, without compromising the ability of future generation to meet their own needs". International Council on Local Environmental Initiatives has also provided a definition for sustainable development according to local government objectives: "sustainable development is a development which provides initial environmental, social and economic services with no threat to the environment, building and social systems which these services depend on".

SELECTION OF THE STUDY

Most of the cities of India contribute less towards Sustainable Development and some of them even acts as a counterattack against Sustainable Development aspects. The present pattern of urbanization has created a greater burden on the hinterlands and the public authority of the country. India is seventh largest country by area and

major Urban cities of India have created major environmental problems which are related to both sources of renewable and non-renewable resources in the manner in which they have been used.

Major cities are striving hard to meet the needs of the citizens and as well as management of waste disposal has become a major problem. The complex choice to achieve growth and long term economic, social and environment sustainability with a limited resources the urban cities possess is a complex choice to be made as the outcome of one choice decision can affect another dimensions to a larger extent further increasing the complexities that already exists in the system that can create bottlenecks in the economy as a whole.

Objectives

1. To study the relationship between sustainable development and urbanization.
2. To study the population parameter of few Indian cities over the years.

RESEARCH METHODOLOGY

This study is a descriptive research study. The sample size of 10 selected cities has been taken into consideration. The data have been collected through secondary sources like-

- Government records,
- Books, Journals,
- Articles and web-based journals.

LITERATURE REVIEW

Linkages between rural-urban migration has been going on since civilization and it helps us to study the insight and the scope of urbanization with a comparative study of the census of India. (Denis E. and Zérah M.H, 2014). Rational Urbanization can be achieved only if it is resilient and feasible as there is a huge overlap between the meaning of urban resilience and sustainability, that weakens both the concepts (Zhang and Li, 2018). A detailed study about contemporary challenges with regard to sustainability and urban centres with recent concepts of with an aim to achieve balance between urbanization and sustainable development (Gohar, Amir, 2016).

Timely structural change A comprehensive approach is needed for sustainable cities with individuals and local state working at the grass root levels as sustainable development is not just related to environment but is also concerned about economic and socio-cultural aspect. To attain social justice which is an important pillar of sustainable development can be achieved if there is proper distribution of wealth and income among individuals (Hamed Shoja, Mohsen Heidari, 2015). With a very few literature regarding sustainable development initiatives in India are made available; it has

been noted that the researchers failed to explore the sustainable opportunity in country despite identifying the SDGs of gender equality, reduction in inequality, peace and justice, and responsible consumption and production as the most promising niches for future research in the area of sustainable development initiatives in India (Sajjan Choudhuri, 2019). (The Scottish Executive Social Research 2006) reflected various core areas of Sustainable Development in detailed manner like - sustainable procurement, sustainable consumption, education for sustainable development, etc.

DATA ANALYSIS AND INTERPRETATION

Before we discuss about the impact of urbanization it is important to study about the demographic and population census study, features of urbanization and the spatial distribution of population over the years and to address whether Urbanization has

relation with sustainable development. Urbanization has created a set of deadlocks that have affected the sustainable development goals to a larger extent.

Population Data Study

POPULATION CHANGES OVER THE TIME PERIOD (Table 1)

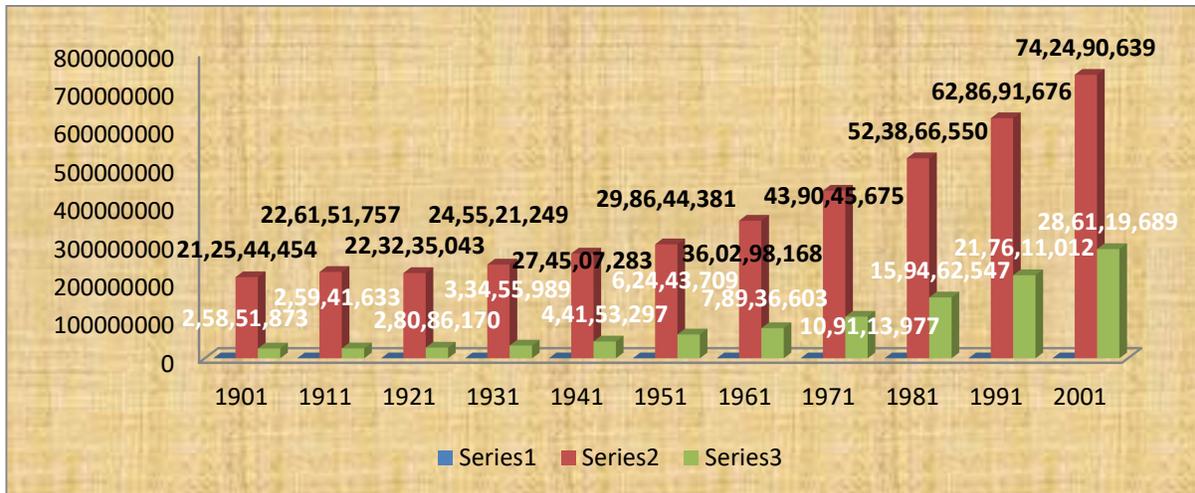
Population Census 2011 and 2001 Comparison for better understanding (population in crore) (Table 2)

Since Independence absolutely the increase in population is additional in urban areas as compared to rural areas mainly because of the level of urbanization accumulated from 27.81% in 2001 to regarding 31.16% in 2011. The proportion of rural population declined throughout this era from 72.19% to regarding 68.84%.

Top 10 largest cities of India by Population as per 2011 Census (Table 3)

Table 1- Self-represented and numerical data sourced from – Office of the Registrar General and Census Commissioner, India, Ministry of Home Affairs. GOI

Year	Total	Rural	Urban
1901	238,396,327	212,544,454	25,851,873
1911	252,093,390	226,151,757	25,941,633
1921	251,321,213	223,235,043	28,086,170
1931	278,977,238	245,521,249	33,455,989
1941	318,660,580	274,507,283	44,153,297
1951	361,088,090	298,644,381	62,443,709
1961	439,234,771	360,298,168	78,936,603
1971	548,159,652	439,045,675	109,113,977
1981	683,329,097	523,866,550	159,462,547
1991	846,427,039	628,691,676	217,611,012
2001	1,028,737,436	742,490,639	286,119,689



Graph 1 - Self-represented and numerical data sourced from –Office of the Registrar General and Census Commissioner, India, Ministry of Home Affairs. GOI

Table 2 - Self-represented (2011 data collected from Census of India handbook 2011)

Year	Total in Cr	Rural	Urban
2001	102.9	74.3	28.6
2011	121.0	83.3	37.7
Difference	18.1	9.0	9.1

Table 3 – Self-Represented

S.N.	Name of the City	Population(In million)
1	Mumbai	18.4
2	Delhi	16.3
3	Bangalore	8.44
4	Hyderabad	6.73
5	Ahmedabad	5.57
6	Chennai	4.64
7	Kolkata	4.49
8	Surat	4.46
9	Pune	3.12
10	Jaipur	3.04



Cities in million (graph self-represented)

Graph 2 – Self-Represented

Hypothesis Testing

H₀: There is no positive correlation between Urbanization and the sustainable development.

H₁: There is positive correlation between Urbanization and the sustainable development.

Impact of urbanization on sustainability

Urbanization elements govern the process and criteria laid down for growth in orderly and efficient manner. Urbanization brings accelerated demand for the reasonable housing well connected transport facilities, infrastructure and basic services which brings drastic changes of all categories of the people.

This paper attempted to analyse the relationship between urbanization and the sustainable development.

While sustainable developments harmonize three significant elements viz. economic growth, social inclusion as well as environment protection.

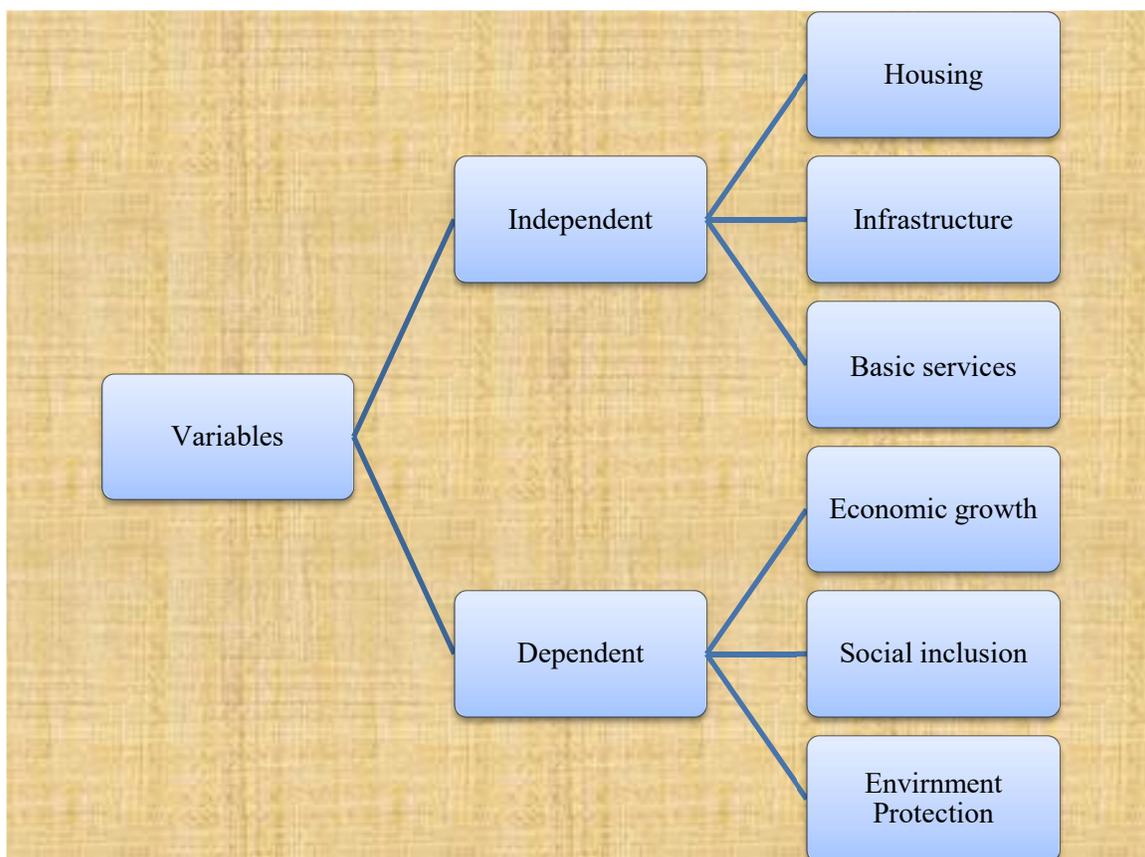


Figure-1-(Source: Secondary Data)

Reliability Analysis

Table-4

Case Processing Summary

		N	%
Cases	Valid	50	100.0
	Excluded ^a	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Table-5

Reliability Statistics

Cronbach's Alpha	N of Items
.973	6

The reliability statistics of case processing summary indicating .973, which is an indicative of a high level of internal consistency of the scale with the specific sample to test the hypothesis collected.

Table-6

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Basic services , Housing, Infrastructure ^b		Enter

a. Dependent Variable: Economic growth

b. All requested variables entered.

Table-7

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.934	3	18.645	110.723	.000 ^b
	Residual	7.746	46	.168		
	Total	63.680	49			

a. Dependent Variable: Economic growth

b. Predictors: (Constant), Basic services , Housing, Infrastructure

Table-8

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Basic services , Housing, Infrastructure ^b		Enter

a. Dependent Variable: Social inclusion

b. All requested variables entered.

Table-9

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.637	3	18.879	64.599	.000 ^b
	Residual	13.443	46	.292		
	Total	70.080	49			

a. Dependent Variable: Social inclusion

b. Predictors: (Constant), Basic services , Housing, Infrastructure

Table-10

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Basic services , Housing, Infrastructure ^b		Enter

a. Dependent Variable: Environment Protection

b. All requested variables entered.

Table-11

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.401	3	24.800	134.542	.000 ^b
	Residual	8.479	46	.184		
	Total	82.880	49			

a. Dependent Variable: Environment Protection

b. Predictors: (Constant), Basic services , Housing, Infrastructure

RESULT ANALYSIS

The regression analysis for testing the

hypothesis depends on the relation between independent and dependent variable on the

basis of calculated value of the analysis. The significance value (p) shown in all above three table is less than 0.05.

Considering the value $p < 0.05$ indicates that null hypothesis is rejected and alternative hypothesis is accepted. Therefore there is positive correlation between Urbanization and the sustainable development.

SUGGESTIONS

1. Making spaces for green gardens and installations of bio-tech filtration at those places where the content of pollution is high.
2. Construction of buildings must be done in sustainable manner with use of green technologies.
3. Agroforestry and organic farming must be promoted in outskirts of cities.
4. To increase in forest cover and opening of national parks to encourage biodiversity in the city.
5. Groundwater must not be exploited. Rain water harvesting must be made compulsion in all cities.
6. Management for street animals like dogs and cats must be made for their safety and adoption campaigns must be held at regular intervals. Animals are also a part of our ecosystem and so they deserve the same quality of life as we humans.
7. Availability of clean public toilets at every 2-3km radius in cities.
8. Solar tree panels that are economical must be setup.
9. Awareness about climate change, importance of environment must be known to school children and activities like plantation in school, keeping the school clean, using water with care must be initiated in all schools.
10. Cleaning the drainage and proper management of sewage must be made sure. Keeping heavy fines for the people who throw waste in public and tourist places.

CONCLUSION

The increase in pollution in all Indian cities has increased drastically, it is important that we must not take the natural environment for granted and make use of resources with utmost care. The rural and urban youth must actively take part in Eco-friendly projects in order to gain a insight of the importance of sustainable development and as to why natural resources must be conserve for the coming future. Long term Sustainable Approach, saving natural resources, optimizing productivity with existing man power must be ensured. For example use of Clay hollow bricks for construction of residential apartments and commercial buildings as they are cheap and

intake less water and are environmental friendly with - reduce, reuse and recycle aspect. Review of environmental policies, strict laws and regulations must be implemented who cause harm to the environment.

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