

# Environment and Urbanisation: Peoples' Perception in Bhubaneswar City and Lessons for Urban Policy

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## ABSTRACT

Cities in India, as elsewhere in the world, are the engines of economic growth. This is due to their external economies of agglomeration. Yet the neglect of the urban environment raises serious questions about sustainable growth and development. While international conventions and forums propagate “think globally and act locally”, the paradigm is not harnessed due to the inconsistency between peoples' perception and government policies and programmes. This paper links people perceptions about the environment in the city of Bhubaneswar, the capital of Odisha to draw lessons for city development policy. The study is based on a primary household survey conducted to understand the perception of the dwellers of Bhubaneswar towards their local environment, which includes the quality of air, water, state of greenery and solid waste management. A multinomial logit analysis was conducted to determine the relation between the socio-demographic status and the perceptions of the respondents. The study found the prevalence of similar views among the respondents. The sense of dissatisfaction and awareness among the citizens provides a strong case for a people-centric approach to ensure environment sustainability and urban prosperity simultaneously.

**Keywords:** Urbanisation, Agglomeration, Environmental Degradation, Bhubaneswar.

**JEL Classifications:** Q53, Q58, R11

### Introduction

India has 410 million people living in urban areas at present and is projected to contain 814 million by 2050 (United Nations 2015). Due to rapid industrialization and urbanisation, the world today is vastly different from what it was earlier. Urbanisation brings with it several positive as well as negative externalities. The positive externalities of agglomeration and networking boost productivity of workers and reduce transaction costs. Cities act as engines of growth and generators of employment in the formal and informal sectors. However, negative externalities like pollution, congestion, sprawl and slums are a setback to the quality of life in cities. One of the most significant negative externalities is environmental degradation. Environmental degradation manifests itself in the form of air and water pollution, massive loss of green cover, poor solid waste management and adverse effects of global warming. These have a harmful impact on the quality of life, functional efficiency and economic growth in cities.

Cities are also experiencing considerable changes in weather conditions. The changing weather conditions and rising temperature bear testimony to the fact that human beings are exerting greater pressure on Earth's resources like never before. The rising numbers of vehicles and industrial emissions have contributed to air pollution. Improper disposal of household and industrial wastes contribute to contamination of surface as well as ground water. Abandoned garbage and polythene bags possess a threat to life of cattle and can be a potential breeding place for insects and parasites. Trees are being recklessly cut to accommodate the rising population. This has led to an increase in temperature. Internationally, cities contribute to about 70 percent of Green House Gas (GHG) emissions.

There are a number of environmental issues in India like air pollution, water pollution, loss of green cover, improper solid waste management etc. These along with several other factors have contributed to a change in the environmental conditions of India. Table 1 given below discusses the trends in temperature and climate of India. While the mean, maximum and minimum temperature has increased, mean rainfall has decreased.

**Table 1 : Trends in Temperature and Climate of India**

Mean annual temperature has increased	0.56°C per 100 years between 1901 and 2007
Seasonal mean rainfall has decreased	Over the 20 <sup>th</sup> century
Mean maximum temperature has increased	1.02°C per 100 years over the period 1901-2007
Mean minimum temperature has increased	0.12°C per 100 years over 1901-2007
Extreme rainfall event has become more frequent	Over the 20 <sup>th</sup> century

*Source: Climate Change Knowledge Portal, World Bank*

This paper aims at linking peoples' perceptions about their local environment to derive implications for broader city development strategy in Bhubaneswar and urbanisation strategy in India. Over the years, the city has witnessed the growth of infrastructure and economy. However, these changes have been accompanied by a changing face of the environment quality of the city. This change is the motivation that drove this study to determine the perceptions of the dwellers towards the quality of environment in Bhubaneswar.

The study aims at achieving the following objectives: to know the perceptions of the dwellers of Bhubaneswar city towards the environment of the city: quality of air, quality of water, loss of greenery, and solid waste management in the city; to understand how these perceptions vary according to the socio-demographic characteristics of the respondents using a multinomial logit model; and finally to draw lessons for urban environment and development strategy in Bhubaneswar and for the country.

The rest of the paper is organized as follows: section 2 provides a review of literature on the interaction between urbanisation and environment. Section 3 is an introduction to the area of study, Bhubaneswar. Section 4 describes the sample data and variables in details. Section 5 states the methodology adopted in the study. The results of the household survey and multinomial analysis have been put forth in section 6. Section 7 states the steps to be taken to ensure environment sustainability and concludes.

### **Review of Literature**

The last decade saw an accelerated pace of urbanisation in India with 32 percent of the population residing in urban areas in 2011. Cities provide a natural ground for the accentuation of capital, talent, skill and innovation. They have enhanced employment opportunities in formal as well as informal sectors. Cities are the centres of trade and commerce. Cities are about people living and working together, accumulating physical, human and social capital and enhancing productivity. Cities are homes to knowledge externalities, which along with agglomeration externalities, act as powerful drivers of growth (Mohanty 2014).

The importance of cities in India can be gauged from the fact that the contribution of urban areas to GDP rose from 29 percent in 1950-51 to 62-63 percent in 2007. The figure is projected to rise to about 75 percent by

2021 (Planning Commission 2008). 70 percent of new employment and 85 percent of public finance will be generated by cities (McKinsey 2010). However, this rapid pace of urbanisation has also been accompanied by several problems. Cities drive national economies by creating wealth, enhancing social development and providing employment but they can also be the breeding grounds for poverty, exclusion and environmental degradation (UN-HABITAT, 2008). Environmental degradation due to rapid urbanisation and industrialization transcends political boundaries and is not restricted to the regions undergoing such transformations. Today it is one of the major problems faced not just by cities but also urban peripheries.

Urbanization and climate change are two defining phenomena of the 21st century, and these two processes are increasingly interconnected. Urban land-use and land-cover changes have considerable impacts on climate (Seto and Shepherd 2009). Urbanization is generally seen as a demographic and economic phenomenon. However, it is also a process of ecological transformation by humans, which significantly influences the functioning of local and global ecosystems. As a result, urbanization is one of the key drivers of global environmental change (Huang et al. 2010). Given the large and ever-increasing fraction of the world's population living in cities, and the disproportionate share of resources used by these urban residents, cities and their inhabitants are key drivers of global environmental change (Grimmond 2007).

Several studies have found that global rapid urbanization has resulted in extensive environmental changes including green-house gas emissions, deforestation, desertification, biodiversity losses, decreased soil fertility, water quality, ecosystem services, fragmentation of natural landscapes, changing ecology and biodiversity of the region, depletion of natural resources and degradation of air quality and many others (Sharma and Joshi 2016).

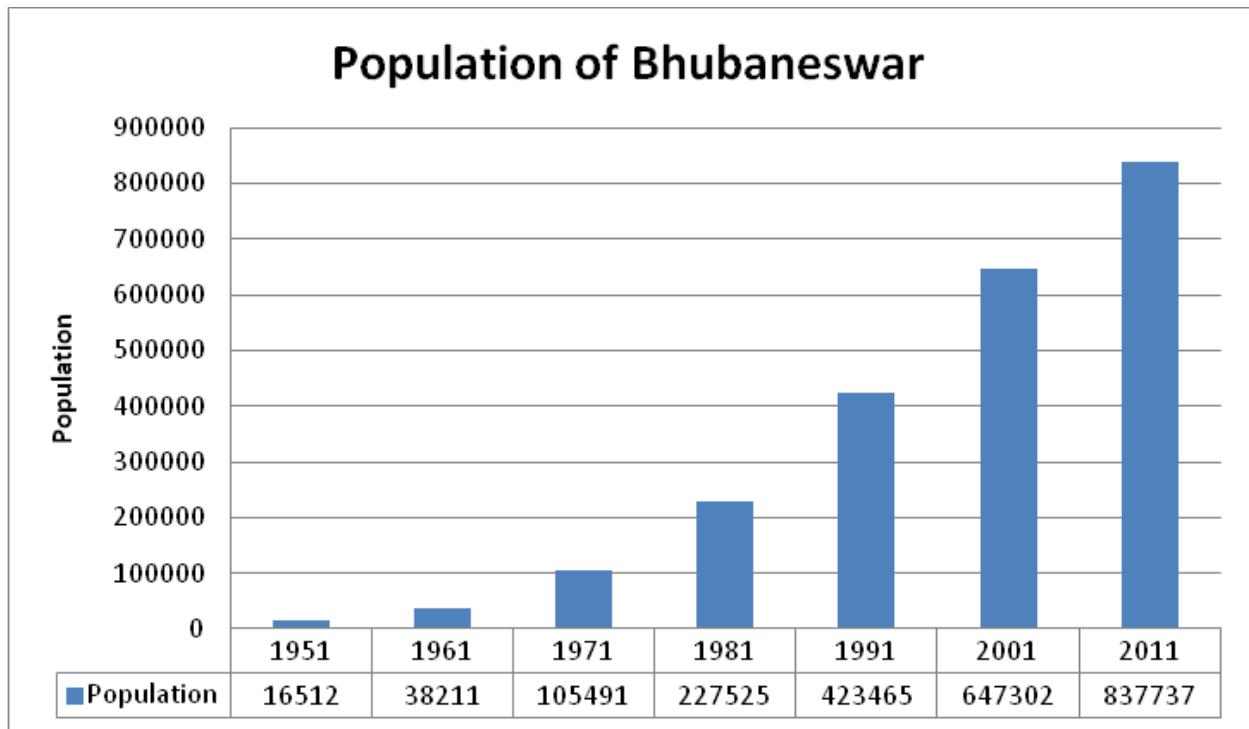
Rapid urbanization puts extreme pressure on the environment. However, urbanization is inevitable and extremely desirable in a growing economy like India. Thus, it is necessary to determine and follow the path of sustainable development where growth of cities and conservation of natural environment can go hand in hand. Along with government, city dwellers can ensure a sustainable living by altering their actions and attitude thereby minimizing environmental degradation. Thus, it is necessary to understand and analyse how city dwellers perceive the quality of the environment in their city. Such an analysis could also help in identifying problem areas and the environment conditions which need urgent attention.

### **Study Area**

The study was undertaken in Bhubaneswar, the capital city of Odisha. It is one of the country's fastest-developing cities. It is an emerging Information Technology (IT), health and education hub. It also topped the list of the cities with the potential of being developed under the 'Smart Cities Mission' of the Government of India in 2016. It is emerging as a major city in the east and is experiencing environmental change simultaneously. Bhubaneswar is considered appropriate for the study because of this simultaneous change. It appears to be a good instance to study the nexus between urbanization and environmental degradation.

Figure 1 shows the population of the city in various census years. It is very evident from the figure that the population of Bhubaneswar has been increasing at an increasing rate since 1951.

Figure 1 : Bhubaneswar Population Growth Chart



Source: Census of India, 2011

According to a study of Associated Chambers of Commerce and Industry of India, Bhubaneswar recorded a 42.2 percent rise in total employment generation. This was the highest amongst 17 major tier 2 cities of India (Economic Times, 2011). In 2012, World Bank ranked Bhubaneswar third among Indian cities, in terms of starting and operating a business (Doing Business 2013 Report, World Bank). Bhubaneswar was also listed among the top ten emerging Indian cities, taking into account factors like demographics, physical, social and real estate infrastructure, current level and scope of economic activities and government support (The Times of India, 17 November, 2012). Towards the late 2000s the city witnessed a high tide of investments in the real estate, infrastructure, retail and hospitality sectors. According to a 2012 survey, among the Tier II cities in India, Bhubaneswar has been chosen as the best for conducting IT/ITES business (Business Standard, 27 December 2012).

As is evident Bhubaneswar is growing at an unprecedented rate. Both economic and population growth are taking place. To cater to the growing needs the city is expanding. The number of vehicles has increased like never before. To avoid traffic congestions, flyovers and wider roads are being constructed. With the real estate boom and expansion of roads in full swing, a number of trees in and around the city have been recklessly cut down. The loss of greenery has forced the city to wear a sorry face. The increase in traffic has added to air pollution in the city. Improper disposal of household wastes and lack of proper drainage system is causing pollution of both surface and ground water. The city is remarkably warmer now and the average rainfall has also reduced. The rank of Bhubaneswar in terms of cleanliness was 24 (out of 73 cities in 2016). However, it declined to 94 (among all Indian cities) in 2017 (MoUD 2016, 2017).

**Sample Data and Variable Description**

In the study, 100 persons of different socio-demographic categories were interviewed based on a questionnaire. Purposive sampling method was used in the study. Respondents were asked to rate how much

they were satisfied with the quality of each of the environment factors (air, water, state of greenery and state of solid waste management). The choice was set among the following three alternatives: completely satisfied, a little dissatisfied and completely dissatisfied. The questionnaire also required respondents to provide details of age, education, income and gender to be able to study how their responses vary with these variables.

**Table 2 : Definitions of Variables and Sample Characteristics**

Variable Name	Description	Mean (Std. Dev)
Gender (GEN)	Dummy (Male=0; Female=1)	0.40 (.492)
MonthlyIncome (INC)	Four categories (1=less than Rs. 10,000; 2=Rs. 10,000 to 50,000; 3=Rs. 50,000 to 1 lakh and 4=more than Rs. 1 lakh)	2.55 (1.058)
Education (EDU)	Five categories (1= up to primary; 2=middle and secondary; 3=senior secondary/diploma; 4=graduates; 5=post graduates and above)	4.01 (1.314)
Duration of Stay in Bhubaneswar (DUR)	Four categories (1=less than 5 years; 2=5 years to 10 years; 3=10 years to 15 years and 4=more than 15 years)	2.93 (1.130)
Changing Lifestyle (CHLS)	Respondents were asked how much they were willing to change their lifestyle to reduce the damage they cause to the environment. (1=extremely willing; 2=moderately willing and 3=not at all willing)	1.43 (.640)
Purchase environment friendly products (PEFP)	Respondents were asked how likely they were to buy a more expensive product if its packaging is more environmentally-friendly than its competitor's product. (1=extremely likely; 2=moderately likely and 3=not at all likely)	1.79 (.756)
Tree Plantation (TP)	Respondents were asked if they had planted trees in last one year. (0=Yes; 1=No)	0.74 (.441)
More Parks (MPK)	Respondents were asked if they wanted more public parks to be built by the local authorities. (0=Yes; 1=No)	0.03 (.171)
Kitchen Garden (KG)	Respondents were asked if they have a kitchen garden or any flowered plant at your home/roof/courtyard. (0=Yes; 1=No)	0.43 (.498)
Segregation of wastes (SEG)	Respondents were asked if they segregate biodegradable and non-biodegradable wastes that their household generates. (1= always; 2=sometimes and 3=never)	2.17 (.726)

Source: Author's Compilation from Household Survey

**Methodology**

Multinomial logit model was used to understand the variations in perceptions regarding the quality of environment according to several variables. The multinomial (Polytomous) logistic regression model is an extension of the binomial logistic regression model. It is used when dependent variable has more than two discrete categories. It is an extension of binary logistic regression. The perceptions regarding the quality of environment was judged based on the satisfaction of the respondent towards the quality. The level of satisfaction was divided into three discrete alternatives: completely satisfied, little dissatisfied and completely dissatisfied. Since there are more than two discrete alternatives, it is appropriate to employ a multinomial logit model.

$$Y_i = \sum_{n=1}^k B_n X_{in} + U_i$$

Where,  $Y_i = 1$ , if individual 'i' is completely satisfied

$Y_i = 2$ , if individual 'i' is a little dissatisfied

$Y_i = 3$ , if individual 'i' is completely dissatisfied

The equations involved in each case are as follows:

*Perception on Quality of Air:*

$$\ln \left( \frac{P(\text{completely satisfied})}{P(\text{completely dissatisfied})} \right) = b_{10} + b_{11}GEN + b_{12}INC + b_{13}EDU + b_{14}DUR + b_{15}CHLS + b_{16}PEFP \dots 1$$

$$\ln \left( \frac{P(\text{little dissatisfied})}{P(\text{completely dissatisfied})} \right) = b_{20} + b_{21}GEN + b_{22}INC + b_{23}EDU + b_{24}DUR + b_{25}CHLS + b_{26}PEFP \dots 2$$

*Perception on Quality of Water:*

$$\ln \left( \frac{P(\text{completely satisfied})}{P(\text{completely dissatisfied})} \right) = b_{30} + b_{31}GEN + b_{32}INC + b_{33}EDU + b_{34}DUR + b_{35}CHLS \dots 3$$

$$\ln \left( \frac{P(\text{little dissatisfied})}{P(\text{completely dissatisfied})} \right) = b_{40} + b_{41}GEN + b_{42}INC + b_{43}EDU + b_{44}DUR + b_{45}CHLS \dots 4$$

*Perception on State of Greenery:*

$$\ln \left( \frac{P(\text{completely satisfied})}{P(\text{completely dissatisfied})} \right) = b_{50} + b_{51}GEN + b_{52}INC + b_{53}EDU + b_{54}DUR + b_{55}CHLS + b_{56}PEFP + b_{57}TP + b_{58}KG + b_{59}MPK \dots 5$$

$$\ln \left( \frac{P(\text{little dissatisfied})}{P(\text{completely dissatisfied})} \right) = b_{60} + b_{61}GEN + b_{62}INC + b_{63}EDU + b_{64}DUR + b_{65}CHLS + b_{66}PEFP + b_{67}TP + b_{68}KG + b_{69}MPK \quad \dots 6$$

Perception on Solid Waste Management:

$$\ln \left( \frac{P(\text{completely satisfied})}{P(\text{completely dissatisfied})} \right) = b_{70} + b_{71}GEN + b_{72}INC + b_{73}EDU + b_{74}DUR + b_{75}CHLS + b_{76}PEFP + b_{77}SEG \quad \dots 7$$

$$\ln \left( \frac{P(\text{little dissatisfied})}{P(\text{completely dissatisfied})} \right) = b_{80} + b_{81}GEN + b_{82}INC + b_{83}EDU + b_{84}DUR + b_{85}CHLS + b_{86}PEFP + b_{87}SEG \quad \dots 8$$

### Results and Analysis of the Study

The socio-demographic characteristics of the sample have been summarized in table 3 below.

**Table 3 : Socio-Demographic Characteristics of the Sample**

Groups	Percentage
<b>Gender</b>	
Male	60
Female	40
<b>Monthly Income (in Rupees)</b>	
<10,000	22
10,000 to 50,000	22
50,000 to 1,00,000	35
>1,00,000	21
<b>Education</b>	
Up to Primary	9
Middle and Secondary	10
Senior Secondary/Diploma	1
Graduates	31
Post Graduates and above	49
<b>Years of Stay in Bhubaneswar</b>	
Less than 5 years	16
5 years to 10 years	19
10 years to 15 years	21
More than 15 years	44

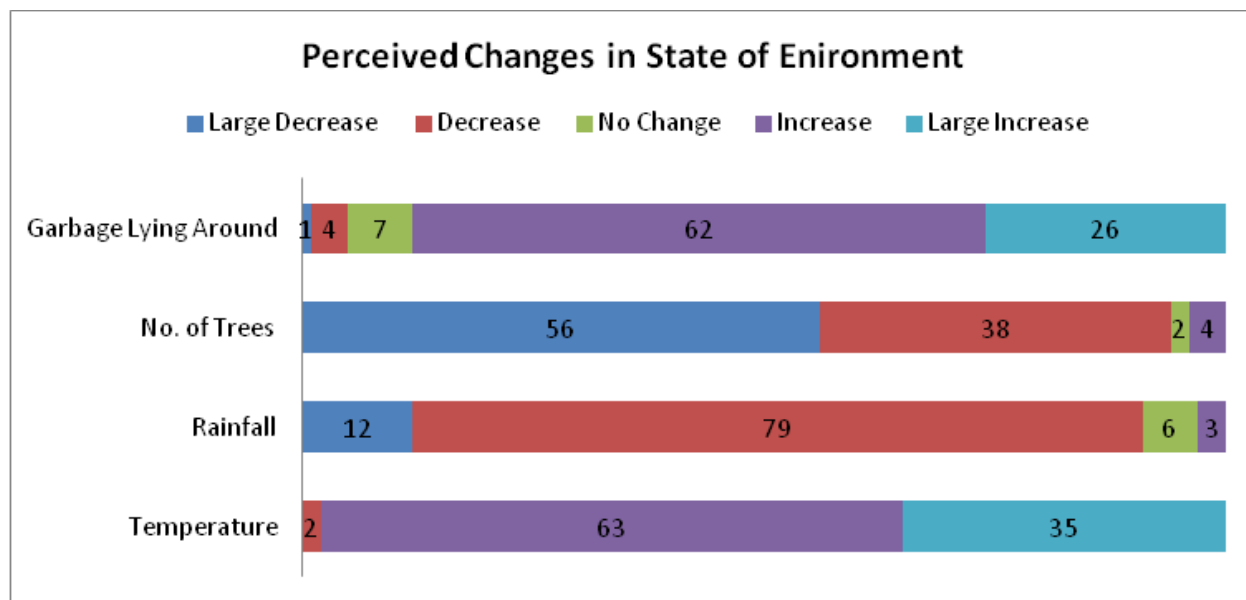
Source: Author's Compilation from Household Survey



**Results of the Survey**

In terms of specific environment elements like temperature, number of trees, garbage disposal, rainfall etc., most of the people had common perceptions as there is no substantial variation in perceptions regarding these elements across the sample. The results are reflected by figure 2 given below.

**Figure 2 : Perceived Changes in State of Environment since last five years**



Source: Author's Compilation from Household Survey

Table 4 given below summarizes the level of satisfaction of the respondents regarding the present state of environment.

**Table 4 : Level of Satisfaction Regarding Present State of Environment**

Environment Characteristics	Percentage of Respondents		
	Completely Satisfied	Little Dissatisfied	Completely Dissatisfied
Air Quality	19	66	15
Water Quality	62	29	9
State of Greenery	13	63	24
Solid Waste Management	34	50	16

Source: Author's Compilation from Household Survey

Out of all the environmental issues covered in the study, 42 percent considered air pollution as the most serious environment issue, 36 percent were most concerned about the loss of greenery, 17 percent were most concerned about the problems of solid waste management and only 5 percent perceived water pollution as the most serious environmental issue.

**Multinomial Logit Analysis**

**Perception on Quality of Air:**

The multinomial logit analysis reveals that males compared to females were more likely to be completely satisfied with the quality of air. This relation was found to be statistically significant (p<0.01). Respondents in



the lower income brackets were more likely to be a little dissatisfied with the quality of air over being completely dissatisfied. The result was statistically significant with  $p < 0.1$ . However, respondents in the income group of Rs. 50,000 to 1 lakh per month were more likely to be completely satisfied with the air quality rather than being completely dissatisfied. This relation was seen to be statistically significant ( $p < 0.05$ ). Respondents who were staying in Bhubaneswar for 5 to 10 years were more likely to be completely dissatisfied with the quality of air. Since, they have experienced the drastic changes that have occurred in the last decade in terms of the increase in buildings and vehicles, such dissatisfaction commensurate with facts. However, respondents who have been staying for more than 15 years were more likely to be a little dissatisfied rather than being completely dissatisfied. A possible reason for such a response could be the comparison between the merits of urbanisation which have undertaken over the same period. However, the result was not statistically significant. Respondents who were less educated were found to be more likely to be dissatisfied with the quality of air. Indoor air pollution could be a major factor behind this dissatisfaction since they lack the knowledge of cleaner fuels. Keeping up with logic, respondents who were extremely and moderately willing to change their lifestyle so as to reduce the harm they cause to environment were more likely to be completely dissatisfied with the quality of air. Respondents who were extremely and moderately likely to purchase costlier products if their packaging was environment friendly were observed to be more likely to be a little dissatisfied with the quality of air rather than being completely dissatisfied.

#### **Perception on Quality of Water:**

Unlike their perceptions regarding the quality of air, males compared to females were more likely to be completely dissatisfied with the quality of water. Respondents in the lower income group were more likely to be satisfied with the quality of water rather than being completely dissatisfied. It was observed that many of the households in this income group got individual water connections in last decade only. Thus, their perception regarding the quality of water includes some elements of satisfaction regarding the ease of access to water. The same argument holds true for people who have stayed for more than 10 years in Bhubaneswar. However, people who have stayed for durations lesser than 10 years were more likely to be completely dissatisfied over being completely satisfied with the quality of water. The respondents who were extremely and moderately willing to change their lifestyle so as to reduce the harm they cause to environment were more likely to be completely dissatisfied with the quality of water. A majority of the respondents were satisfied with the quality of water (62 percent). This could be a reason that the coefficients were found to be statistically insignificant in the analysis. This implies that there is an overall sense of satisfaction about the quality of water in Bhubaneswar despite of the socio-demographic differences.

#### **Perception on State of Greenery:**

Males compared to females were found to be more likely to be completely dissatisfied with the state of greenery over being completely satisfied. Respondents in the lower income groups were more likely to be satisfied with the state of greenery over being completely dissatisfied. The relation was found to be statistically significant ( $p < 0.05$ ). Respondents who had stayed in Bhubaneswar for less than 10 years were more likely to be completely dissatisfied with the state of greenery. Respondents who stayed for more than 10 years were more likely to be a little dissatisfied over being completely dissatisfied with the state of greenery. The positive impacts of urbanisation could be responsible for such a response. Such respondents might have felt that the loss of greenery was necessary to accommodate the infrastructure development in Bhubaneswar. It was found that respondents who had education till senior secondary level were more likely to be completely

dissatisfied with the state of greenery rather than being completely satisfied. It was the opposite in the case of graduates and respondents who held higher degrees. Respondents who were extremely and moderately likely to purchase costlier products if their packaging was environment friendly were observed to be more likely to be completely dissatisfied with the state of greenery rather than being completely satisfied. A statistically significant relation was found ( $p < 0.1$ ) between people who were extremely likely to purchase costlier products with environment friendly packaging and their perception of being a little dissatisfied. This result is an indication that people are aware of the harm polythenes cause to the environment and should be encouraged to avoid its usage. The analysis also shows that respondents who had planted trees in the last one year were more likely to be completely dissatisfied with the state of greenery rather than being completely satisfied. Similar results were obtained for the respondents who had kitchen gardens at their homes and those who wanted more public parks. A statistically significant relation was found between perceptions on the state of greenery and people who had kitchen garden with  $p < 0.05$ .

#### **Perception on Solid Waste Management:**

As the study reveals, males compared to females were more likely to be completely dissatisfied with the quality of solid waste management over being completely satisfied. It was found that respondents who had education till senior secondary level were more likely to be completely dissatisfied with the solid waste management rather than being completely satisfied. Respondents who said that they segregated household wastes into biodegradable and non-biodegradable were more likely to be completely satisfied with the solid waste management. This relation was found to be statistically significant ( $p < 0.05$ ). It is also seen that respondents in the income group of Rs. 10,000 to Rs. 50,000 per month were more likely to be completely satisfied with the quality of solid waste management rather than being completely dissatisfied. This response could be in anticipation of a Solid Waste Management tax/cess being imposed in lieu of service provision. Duration of stay in Bhubaneswar had a statistically significant relationship ( $p < 0.05$ ) with the perception on the state of solid waste management. Education (till primary level) had a statistically significant relationship with the perception on solid waste management. These respondents were seen to be more likely to be completely dissatisfied with the solid waste management practices. The less educated people may not be having proper sanitation facilities and that could be a reason behind this dissatisfaction.

#### **Conclusion and Policy Recommendations**

From the study it can be concluded that there is a common trend in the sense of dissatisfaction regarding various environmental aspects. Most of the people (42 percent) considered air pollution as a major threat and 81 percent of the respondents were little to completely dissatisfied with the quality of air in the city. This directly follows from the fact that the number of vehicles in the city has increased manifold since last decade. The increase in industrial activities in certain areas of the city has contributed to the deterioration in the quality of air.

At present, there is a sense of satisfaction among the respondents regarding the quality of water with 62 percent of the respondents stating that they were completely satisfied with the quality of water. However, this should not be considered as a long term perception. As the city is growing at a rapid scale, it is necessary to plan properly so as to ensure that adequate water of good quality is made available to the citizens in the long run.

Maximum number of respondents (87 percent) stated that they were little to completely dissatisfied with the state of greenery in the city. Some cities like Mumbai levy a 'tree cess', which will not only enable citizens to

understand the importance of trees but also improve responsiveness on the part of public authorities to preserve the trees. Laws should be in place to prevent the cutting down of trees like the Delhi Preservation of Tree Act (DPTA), 1994. Compensatory afforestation and urban forestry practices should be encouraged and undertaken with commitment and consistency.

Bhubaneswar has no strict mechanism in place so as to ensure the segregation of household wastes into biodegradable and non-biodegradable wastes. Such practices will not only make the disposal of wastes easier for the public authority but also enable the recycling of suitable wastes. A solid waste management cess, as practiced in some metropolitan cities like Bengaluru, may be levied.

The study found that 80 percent of the respondents were willing to purchase a costlier product if its packaging was more environment friendly than its cheaper counterparts. Among them, 41 percent were extremely willing. Further, it was seen that 92 percent of the citizen were willing to change their lifestyle so as to adapt more eco-friendly living. Extreme willingness was observed among 65 percent of the respondents. The study makes a strong case for a people-centric approach to preserve environment as 62 percent of the respondents felt they are the ones who can contribute the most in this regard. Participatory governance, which ensures the involvement of citizen in decision making, will enable citizen to recognize themselves as important stakeholders in improving city environment. This participation can ensure that urban development policies entail the perceptions of the city dwellers and maintain a balance between urbanisation and the quality of environment.

The increase in the number of vehicles in cities has severe implications on the state of city environment. It not only contributes to air and noise pollution but also results in traffic congestion and necessitates expansion of roads. Improvement in public transport network in cities can discourage the usage of personal vehicles. Other mechanisms like congestion charges and tax on polluters will encourage the use of public transport services. The paradigm, "avoid, shift and improve" recommended by the Asian Development Bank should be adopted to make transportation in cities more eco-friendly. This involves: avoiding any rise in travel demand by reduction in the number and length of trips; shifting from the usage of personal vehicles public transport services; and improve the quality of fuel used in vehicles.

A major cause of environmental degradation in cities is the lack of proper planning and myopic attitude of the public authorities. Regulatory institutes are either absent or are not functional. Before any new project is approved a proper assessment should be done of the various impacts it will have on the environment. Blueprint of a sustainable city should be prepared taking into account the needs of the expanding population. A people-centric approach and participatory urban governance is a must in the planning process. City planning should be made so as to channelize the city requirements in the next 30 years and beyond. The concept of "think globally, act locally" should be brought into practice. This requires coordinated and joint action of the citizen, local government, state and central government. A city is inevitable to grow and planning should be made keeping this growth trajectory in view.

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