

## Peoples' Perception – A Significant Indicator of Environmental Health

### Abstract

The environment influences as well as is getting impacted by the economic activities of man who, with the aid of his senses grasps an idea about its deterministic and possibility aspects. The point at which man starts altering and later on over exploiting the environment for his own greed leads to the path of degradation of the environment in general and human health in particular. This is based on the perception he has about the development. Similarly, irrespective of the educational attainments, the household behavior about the health and pollution related issues is impacted quite significantly, by the perception of the community about environment.

**Keywords:** Health Hazard, Air Quality Index, Environmental degradation, Sustainable Development Goals.

### Introduction

Development and environmental balance has been the central area of research of many a studies and holds special significance after the recent commitment of the UN to the SDGs (Sustainable Development Goals). However, the human greed for wealth and short-sightedness forcing him to over-exploit the environment, is causing irreparable damage to the environment, thus leaving the present and future generations vulnerable to vagaries of nature. This degradation is however perceived and felt differently by the members of the community who sometimes do not anticipate the impact of reckless destruction of environment exposing it to the pollution and poor quality of air leading to increased burden of public health hazards. To see India's case specifically, it has nine of the 10 most-polluted cities. The homes of majority rural people are the sites of air pollution due to poor ventilation. Overuse of pesticides and fertilizers have not only impacted surface and groundwater sources, but has also extensively contaminated soil in many places. Many places have also witnessed deaths caused by the pollution.

Unfortunately, India is also notoriously known to contribute around a million of the seven million deaths caused by pollution globally.

There is no means to a glorious end of sustainable development than the perception of the common man who still has the power to cognize and move ahead on the journey of advancement. This paper deals with the peoples' perception of the environmental problems and health in the city of Lucknow—the State Capital and the 7<sup>th</sup> most polluted city in the world as per the WHO global air database May 2018

### Aim of the Study

The study aims to understand peoples' perception on the environmental issues, their awareness on how pollution impacts health and what measures they take to deal with solid waste disposal in the city of Lucknow.

### Review of Literature

A review of recent literature on the issue was undertaken. A World Health Organisation, report (WHO 2018) highlights that nine of the 10 most-polluted cities are in India. It also emphasized that the status in rural areas is not any better as homes are sites of air pollution due to poor ventilation. Also, pointing out the alarming situation of surface and groundwater sources, and also the soil in many places, the report says, are extensively contaminated due to pesticide and fertiliser pollution.

The Lancet (2019) reported a high number of deaths taking place in India due to pollution. It says that India contributes one seventh of total deaths, around a million of the seven million deaths caused by pollution globally. Daniel Lachmann (2019) in his book Environmental Problems Globally: From Perception to Reaction has remarked about the relation between the environmental problems and people of the society, both of

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which affect each other. The people create the problem and are affected by it. It tells about the environmental threats and reaction of the society towards them.

Dash and Satpathy (2004) has discussed about the role the women play in environmental protection and has talked about their attitude and concern about it.

The environmentalist Sunita Narain (2017) in her book Conflicts Of Interest: My Journey through India's Green Movement has raised concern about the air pollution in Delhi and cautioned against the sense of complacency. She also outlined possible steps India should take to tackle the problem of environmental degradation. Environmental Performance Index India (2018) has given a very adverse report on the air quality in Indian cities and has cautioned about immediate measure to mitigate the problem in the short run and develop long term strategy for sustainable outcomes.

**Methodology**

The study is based on the primary survey undertaken in six urban localities of Lucknow city during May and June 2018 through schedules on random basis from 100 households equally divided amongst different residential, commercial and industrial areas of the city. The residential area

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includes localities Mahanagar sector-A, C and Mahanagarextention, Vikas Nagar sector-6 and 12, Indira Nagar block- A,B,C, sector-11 and 18; and Patrakarpuram in Gomti Nagar . The commercial area includes Aminabad: Latouche road, Sri Ram road and Kutchehry road, Hazratgunj: Narhi, La Place and Prem Nagar and Chowk; and the industrial area includes Rajajipuram, Talkatora, Kanpur road and Deva road. Statistical tools were used to treat the data considering quantitative and qualitative analyses.

**Demographic Profile**

Out of 100 respondents 43 were male and 57 female. Of which 70 per cent are Hindu, 23 per cent Muslim, 6 per cent Sikh and 1 per cent Christian. 41 per cent are of General category (Gen), 38 per cent are Other Backward Class (OBC) and 21 per cent are Scheduled Caste (SC).

The respondents aged between 15-60 years are 65 per cent and those aged above 60 years are 35 per cent. The marital status of respondents is that 9 per cent are single, 81 per cent are married, 6 per cent are either divorced or separated and 8 per cent are widowed.

Educational status of the respondents is that all are literate where 8 per cent have studied upto High School, 35 per cent upto Intermediate and 57 per cent upto Graduation level or above.

**Table- 1 : Gender, Religion and Caste of the Respondents in Numbers in the Residential, Commercial and Industrial areas Surveyed**

Area	Gender		Religion				Caste		
	Male	Female	Hindu	Muslim	Sikh	Christian	Gen	OBC	SC
Residential	12	22	24	8	2	0	15	14	5
Commercial	14	19	20	11	2	0	13	14	6
Industrial	17	16	26	4	2	1	13	10	10
Total	43	57	70	23	6	1	41	38	21

Source: Primary data (2018)

**Table- 2 : Age, Marital Status and Educational Status of the Respondents in Numbers in the Residential, Commercial and Industrial areas Surveyed**

Area	Age in years		Marital Status				Educational Status		
	15-60	60+	Single	Married	Divorced/ Separated	Widowed	High School	Intermediate	Graduation or above
Residential	24	10	2	28	2	2	3	7	24
Commercial	20	13	1	27	1	4	1	12	20
Industrial	21	12	6	22	3	2	4	16	13
Total	65	35	9	77	6	8	8	35	57

Source: Primary data (2018)

In the residential area there are 35.per cent male and 65 per cent female respondents amongst the total. Of which 70 per cent are Hindus, 24per cent are Muslims and 6 per cent Sikhs. 44 per cent are of Gen category, 41 per cent are OBC and 15 per cent are SC.The age range is as follows: 15-60 years are 71 per cent and above 60 years are 29 per cent. The marital status of respondents is that 6 per cent are single, 82 per cent are married, 6 per cent are either divorced or separated and 6 per cent are widowed.

All the respondents are literate where 9 per cent have studied upto High School, 21 per cent upto Intermediate and 71per cent upto Graduation level or above.

In the commercial area there are 42 per cent male and 58 per cent female respondents amongst the total number of samples taken. Of which 60.60 per

cent are Hindu, 33.33 per cent are Muslim and 6.06 per cent Sikh. 39.39 per cent are of Gen category, 42.42 per cent are OBC and 18.18 per cent are SC.

In the commercial area the respondents aged between 15-60 years are 60.60 per cent and those aged above 60 years are 39.39 per cent. The marital status of respondents is that 3.03 per cent are single, 81.81 per cent are married, 3.03 per cent are either divorced or separated and 12.12 per cent are widowed.

Educational status of the respondents is that all are literate where 6.06 per cent have studied upto High School, 36.36 per cent upto Intermediate and 60.60 per cent upto Graduation level or above.

In the industrial area alone there is 51.51 per cent male and 48.48 per cent female respondents amongst the total number of samples taken. Of which

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78.78 per cent are Hindu, 12.12 per cent are Muslim, 6.06 per cent Sikh and 3.03 per cent Christian. 39.39 per cent are of Gen category, 30.30 per cent are OBC and 30.30 per cent are SC.

In the industrial area the respondents aged between 15-60 years are 63.63 per cent and those aged above 60 years are 36.36 per cent. The marital status of respondents is that 18.18 per cent are single, 69.69 per cent are married, 9.09 per cent are either divorced or separated and 6.06 per cent are widowed.

Educational status of the respondents is that all are literate where 12.12 per cent have studied upto High School, 48.48 per cent upto Intermediate and 39.39 per cent upto Graduation level or above.

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## Findings of the Survey Status of the Households

Of the total 100 house holds surveyed 26 per cent of the total respondents live in a joint family and 74 per cent in nuclear family with the number of family members ranging between 1-8 per house hold. In the residential area 26.47 per cent of the house holds live in a joint family and its percentage is 27.27 in the commercial area and 24.24 in the industrial area. The percentage of respondents living in a nuclear family is 73.52 in the residential area, 72.72 in the commercial area and 75.75 in the industrial area. The table below describes the number of members in a family and its percentage in all the three areas.

**Table- 3: Number of Members in a household**

No. of Family Members	Residential Area		Commercial Area		Industrial Area		Percent of total Households Surveyed
	No. of Household	% of total Resi. H.H.	No. of Household	% of total Comm. H.H	No. of Household	% of total Indus. H.H	
1	2	5.88	0	0	0	0	2
2	2	5.88	0	0	1	3.03	3
3	5	14.70	1	3.03	4	12.12	10
4	11	32.35	7	21.21	8	24.24	26
5	8	23.52	15	45.45	9	27.27	32
6	4	11.76	7	21.21	7	21.21	18
7	2	5.88	3	9.09	3	9.09	8
8	0	0	0	0	1	3.03	1
Total	34	100	33	100	33	100	100

Source: Primary data (2018)

## Occupation

The respondents in all the households surveyed are working in the following occupation as mentioned in the table given below:

**Table-4: Occupational Structure**

Occupation	Residential		Commercial		Industrial		Total % of Total H.H. Surveyed
	Number	% of Residential Population	Number	% of Commercial Population	Number	% of Industrial Population	
Teacher	6	17.64	3	9.09	3	9.09	12
Warden	1	2.94	0	0	0	0	1
Doctor	3	8.82	0	0	2	6.06	5
Business	13	38.23	15	48.48	5	15.15	33
Pvt. Job	1	2.94	2	6.06	2	6.06	5
Govt. Job	0	0	0	0	3	9.09	3
Shop	2	5.88	1	3.03	5	15.15	8
Tailor	1	2.94	0	0	0	0	1
Student	1	2.94	0	0	0	0	1
Retd.	1	2.94	0	0	0	0	1
Ex Army	1	2.94	0	0	0	0	1
Lawyer	2	5.88	4	12.12	2	6.06	8
Property.D	2	5.88	1	3.03	3	9.09	6
LIC	0	0	1	3.03	0	0	1
Property	0	0	2	6.06	0	0	2
Consultant	0	0	1	3.03	0	0	1
Hotel	0	0	2	6.06	2	6.06	4
Optician	0	0	1	3.03	0	0	1
Mechanic/Workshop	0	0	0	0	3	9.09	3
Carpentering	0	0	0	0	1	3.03	1
Jeweller	0	0	0	0	1	3.03	1
Water Supplier	0	0	0	0	1	3.03	1
Total	34	100	33	100	33	100	100

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Source: Primary data (2018)

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## Housing

All the households which were surveyed have replied for pucca house. The number of rooms in a house is 1-2 rooms in 15 households, 3-4 rooms in 58 households and more than 4 rooms in 27 households. The number of windows and ventilators

in each room is 1 in 36 households and 2-3 in 64 households. 95 households have replied for good ventilation in their house and 5 households have replied for poor ventilation in their house. All the respondents have stated that they have toilet in their house.

**Table- 5: Housing Condition of the Total Number of Households Surveyed**

Area	Number of Rooms in a house			Number of windows/ventilators in each room		Ventilation	
	1-2	3-4	4+	1	2-3	Good	Poor
Residential	3	19	12	14	20	34	0
Commercial	8	19	6	11	22	31	2
Industrial	4	20	9	11	22	30	3
Total	15	58	27	36	64	95	5

Source: Primary data (2018)

## Water supply

Of all the households surveyed 69 per cent have public water supply, 11 per cent have private water supply and 20 per cent have access to both in their house. The duration of water supply in the houses is less than two hours per day in 19 per cent, 2-4 hours per day in 53 per cent, and 4-6 hours per day in 28 per cent of the households surveyed. The quality of water is stated as good by 25 per cent, poor

by 20 per cent and average by 55 per cent of the total households surveyed. Various measures are opted by the households to purify the water like 6 per cent boil it, 66 per cent use Aquaguard/RO/Water Filters, etc., 22 per cent apply other means like use of alum, sieve, etc. and 6 per cent does nothing to purify the water (3 households each in the commercial and industrial area). The water is stored in a closed container by all the house holds surveyed.

**Table- 6: Type, Duration, Quality of Water and Measures Opted to Purify by the HHs**

Area	Type			Duration in hrs.			Quality			Measures to Purify		
	Public	Private	Both	<2 hrs./day	2-4 hrs/day	4-6 hrs/day	Good	Poor	Avg	Boil	Filers/Aquaguard/RO	other
Residential	20	5	9	4	17	13	10	2	22	2	25	7
Commercial	26	2	5	8	18	7	7	9	17	0	23	7
Industrial	23	4	6	7	18	8	8	9	16	4	18	8
Total	69	11	20	19	53	28	25	20	55	6	66	22

Source: Primary data (2018)

Of the total 34 households surveyed in the residential area 59 per cent have public water supply, 15 per cent have private water supply and 26 per cent have access to both in their house. As is clear from the table.

Of the total 33 households surveyed in the commercial area 79 per cent have public water supply, 6 per cent have private water supply and 15 per cent have access to both in their house.

Of the total 33 households surveyed in the industrial area 69.69 per cent have public water supply, 12.12 per cent have private water supply and 18.18 per cent have access to both in their house.

## Solid Waste Generated by the Households

The households surveyed in the three areas altogether generate solid waste in the following manner per day– less than 2 Kg/day by 35 per cent, 2-4 Kg/day by 56 per cent and 5-6 Kg/day by 9 per cent of the households surveyed. Of the total respondents 43 per cent store the solid waste in a closed container, 31 per cent in an open container, 23

per cent in a poly bag and 3 per cent does not store it and throw it at a particular place in their respective houses. The location of the waste bins in the house is 24 per cent of the house holds have placed it in the courtyard, 24 per cent have placed it in the kitchen, 22 per cent have placed it in both kitchen and the courtyard and 30 per cent have stored it in all the rooms of their respective houses. 74 per cent of the house holds surveyed have appointed a sweeper in their house to dispose off the solid waste while 26 per cent have not appointed the sweeper. The place of disposal of solid waste is near the house for 23 per cent of the total house holds surveyed, municipal waste dumps for 69 per cent, into a drain nearby for 1 per cent and open plot/area for 7 per cent. The frequency of the final disposal of the waste from the waste collection point as observed and replied by the respondents is once a day by 73 per cent of the total respondents, twice weekly by 13 per cent of the respondents, weekly by 14 per cent of the respondents.

**Table- 7: Quantity, Mode of Storage and Sweeper Appointed by the Number of Households**

Area	Quantity Generated /Day (Kg)			Mode of Storage				Sweeper Appointed	
	< 2	2-4	5-6	Closed Container	Open Container	Poly Bag	Don't Store	Yes	No
Residential	10	21	3	19	8	7	0	23	11
Commercial	16	16	1	14	11	8	0	24	9
Industrial	9	19	5	10	12	8	3	27	6
Total	35	56	9	43	31	23	3	74	26

Source: Primary data (2018)

**Table-8: Location of Waste Bins, Place of Disposal and Frequency of Final Disposal of Waste**

Area	Location of Waste Bins in the House				Place of Disposal from the House				Frequency of Final Disposal of Waste		
	Court-yard	Courtyard and Kitchen	Kitchen	In All Rooms	Near the House	Municipal Waste Dumps	Into Drain	Open Plot/Area	Once a Day	Twice Weekly	Weekly Or more
Residential	4	10	4	2	3	26	0	5	23	3	8
Commercial	10	7	9	7	12	21	0	0	28	5	0
Industrial	10	5	11	7	8	22	1	2	22	5	6
Total	24	22	24	16	23	69	1	7	73	13	14

Source: Primary data (2018)

Of the total 34 house holds surveyed in the residential area the respondents replied that the solid waste generated from their house in the following manner- less than 2 Kg/day by 29.41 per cent, 2-4 Kg/day by 61.76 per cent and 5-6 Kg/day by 8.82 per cent of the households surveyed..

#### Medical Aid at the Time of Sickness

Of all the households surveyed in all the three areas 40 per cent visit Private Doctor during sickness, 32 per cent visit Government Hospital or Dispensary 21 per cent visit either private or Govt. Hospital as per their wish and requirement, 1 per cent visit Quack, 1 per cent visit Private and Faqir both as per requirement, 2 per cent visit Private, Govt. and Faqir and 2 per cent visit Govt and Faqir both.

In the residential area out of the total households 47 per cent visit Private Doctor, 32.35 per cent visit Private Doctor and Govt Hospital both as and when required, 11.76 per cent visit only Govt. Hospital, 2.9 per cent visit Govt Hospital and Quack both and 5.8 per cent visit Govt. Hospital and Faqir both.

In the commercial area out of the total households 30.30 per cent visit Private Doctor, 21.21 per cent visit Private Doctor and Govt Hospital both as and when required, 42.42 per cent visit only Govt. Hospital, 6.06 per cent visit all Govt Hospital, private and Faqir.

In the industrial area out of the total households 42.42 per cent visit Private Doctor, 9.09 per cent visit Private Doctor and Govt Hospital both as and when required, 42.42 per cent visit only Govt. Hospital, 3.03 per cent visit Quack and 3.03 per cent visit Private Doctor and Faqir both.

#### Diseases Occurred in the Family in Last One Year

The table given below suggests that out of the total households surveyed 30 per cent have reported for respiratory ailments amongst any of their family members several times in last one year and 34 per cent have reported for it only twice in a year. 26 per cent have reported for cardiac disorder in any of the family members.

**Table- 9: Number of Households with Diseases occurred in the Family in last One Year**

Area	Respiratory		Cardiac	Gastric		Dermatological	ENT	Viral Infections	Vector Borne
	Several Times	Twice a Year		Several Times	Twice a Year				
Residential	13	8	9	14	6	5	12	15	13
Commercial	6	15	10	11	4	9	9	15	11
Industrial	11	11	7	6	9	7	4	16	12
Total	30	34	26	31	19	21	25	46	36

Source: Primary data (2018)

#### Discussion

Waste disposal and management appears a public health issue of concern. The results point towards inappropriate means of waste storage and disposal. 65 per cent of the respondents altogether have reported for generating 2-6 kg of solid waste per day. 57 per cent respondents either store waste in an

open container or throw at a place in their house. One fourth of the respondents have not even appointed a sweeper for disposing the waste. The place of disposal of solid waste is near the house for 23 per cent of the total households surveyed, municipal waste dumps for 69 per cent, into a drain nearby for 1 per cent and open plot/area for 7 per cent. All the

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above stated responses are fatal if the waste remains uncollected for long. The frequency of the final disposal of the waste from the waste collection point as observed and replied by 73 per cent of the respondents is once a day while 27 per cent have responded for twice weekly or once a week only. Thus the waste storing and disposing habits of the respondents needs to be improved.

Although internal environment appears satisfactory as 95 per cent of households have replied for good ventilation in their house thus leaving a little space for accumulation of indoor pollution if any. All the households surveyed use LPG as a fuel for cooking. However one fourth of the respondents have responded for smoking as habit by any of the family members and 30 per cent have reported for respiratory ailments amongst the family members several times in last one year and 34 per cent have reported for its occurrence twice a year. Thus the quality of surrounding air is a cause of concern. The thought which still remains uncaptured by the majority.

Water availability appears satisfactory as 69 per cent have access to public water supply, 11 per cent have private water supply and 20 per cent have access to both in their house. The quality of water is stated as good by 25 per cent, poor by 20 per cent and average by 55 per cent of the total households surveyed. Various measures are opted by the households to purify the water like 6 per cent boil it, 66 per cent use Aquaguard/RO/Water Filters, etc., 22 per cent apply other means like use of alum, sieve, etc. and 6 per cent does nothing to purify the water (3 households each in the commercial and industrial area). The water is stored in a closed container by all the households surveyed. Thus they are much aware of the importance of clean drinking water. But the occurrence of gastric ailments in the family is reported several times in a year by 31 per cent of the total households and twice a year by 19 per cent only which can be due to water quality or eating habits or both.

21 per cent of the households stated for dermatological problems and 25 per cent for ENT. 46 per cent of the households have reported for viral infections and 36 per cent for vector borne diseases in their family in last one year. Out of the total households surveyed 30 respondents replied for the occurrence of death in the family in last five years the reasons for which are either organ failure due to old age, heart, liver or kidney failure, dengue fever, viral infection, gastric ailment or accident.

#### Conclusion

The survey has revealed that although people have started perceiving and conceptualizing the ill-effects of environmental problems and to some extent have also acted towards its elimination but the pace required is still absent and needs to be generated. Even in an educated household the behavior or habits related to health and hygiene depends on the perception one has about these things. This particular aspect has come out as an important indicator of overall outcome of the health issues in a community. An early sensitization in life

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may prove to be effective in improving overall community Behaviour vis a vis environmental protection leading to improved community health. What is being perceived by the households depend upon the social, educational and economic background and her perception forms the foundation of the society and environment on which the multi storied and multidimensional structure of our past, present and future rests. Environmental and public health related policies of the state also have important bearing on the community at large. Issue of solid waste management is one such example where people are largely casual in treating the solid waste the way state has shown little concern of this important public health determinant. Therefore the need of the hour is to transform the attitude of the society towards women's liberty, freedom, education, upliftment and empowerment in general and protecting our own environment in particular. The state has to take lead by bringing in participatory approach in dealing with issues of pollution, waste management, and ventilation.

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