

A STUDY ON ROAD VEHICLE USERS AWARENESS TOWARDS AIR POLLUTION IN MADURAI CITY

A. SHERIN FATHIMA
ASSISTANT PROFESSOR
FATIMA COLLEGE, MADURAI

Abstract

Humans probably first experienced harm from air pollution .The main sources of pollutants in urban areas are transportation predominantly automobiles. A study was made to find out the road vehicle users awareness towards air pollution and to identify the measures taken by road vehicle users to reduce air pollution. With the help of structured questionnaire, data have been collected from the road vehicle users of Kalavasal area in Madurai city. The results revealed that there is awareness among the road vehicle users towards air pollution but they ignore to take measures to reduce air pollution. Though some are affected in various ways the effort taken by them is minimum.

Key words: Air pollution, road vehicle

Introduction

Air pollution is the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere. The atmosphere is a complex dynamic natural gaseous system that is essential to support life on planet Earth. Stratospheric ozone depletion due to air pollution has long been recognized as a threat to human health as well as to the Earth's ecosystems.

Causes of Air Pollution

Air pollution is caused by a wide variety of things. The earth is great at cleaning the air on its own. However, air pollution has grown so much; the earth can no longer clean all of it. This is starting to have adverse effects on the environment such as causing acid rain, smog and a wide variety of health problems such as fibrosis of lungs, leucoderma, skin cancer, asthma,pharyngitis,baldness,hypothyroid,hypertension,copd,insomnia,arthritis.Combustion engine exhaust, factories, petroleum, power lines, pesticides, radioactive fallout, fertilizers dust, indoor air pollution, mining operations, mill and plants are the causes of air pollution.

Statement of the Problem

Environmental pollution problems have been local and minor because of the Earth's own ability to absorb and purify minor quantities of pollutants .Humans probably first experienced harm from air pollution. The introduction of motorized vehicles is the main factor contributing toward the growing air pollution problem. The primary air pollutants found in most urban areas

are carbon monoxide, nitrogen oxides, sulfur oxides, hydrocarbons, and particulate matter that are the emissions produced by motor vehicles. The study is made to find the road vehicle users awareness towards air pollution.

Objectives

- To find the road vehicle users awareness towards air pollution
- To identify the measures taken by road vehicle users to reduce air pollution

Methodology

- Sampling Tool : Structured Questionnaire
- Sampling Method : Convenience Sampling
- Sampling Universe: Road vehicle users
- Sample Size : 50
- Study Place: Kalavasal area of Madurai city

Statistical Tools Applied

- Percentage Analysis
- Yule's co-efficient
- Chi-square test
- Garrett Ranking Method

Hypothesis

H_0 - There exists no relationship between Gender and Smoke emission control Certificate possessed by the respondents.

H_0 - There exists no relationship between Gender and air pollution affected persons.

Limitations

The sample size was limited to 50 and the study is restricted to Kalavasal area in Madurai city.

Analysis and interpretation

Respondent's responses for the questions have been interpreted and a finding has been made based on the respondents responses.

Percentage analysis

Percentage analysis has been used to explain Personal Profile and opinion of the respondents.

Table.1 Gender wise classification of the respondents

Gender	No. of Respondents	Percentage
Male	34	68
Female	16	32
Total	50	100

From the table 1 it is observed that 68 per cent of the respondents are male and 32 per cent are female. It shows that majority of the vehicle users are male.

Table 2 Age wise classification of the respondents

Age	No. of Respondents	Percentage
20-30	18	36
30-40	12	24
40-50	20	40
Total	50	100

From the table 2 it is observed that 40 per cent of the respondents are belonging to the age category of 40-50 years.

Table 3 Type of vehicle owned by the respondents

Type	No. of Respondents	Percentage
Two-wheeler	42	84
Four-wheeler	08	16
Total	50	100

From the table 3, it is observed that 84 per cent of the respondents own Two-wheeler and 16 per cent own Four-wheeler. Usage of Two-wheeler is more in Madurai city

Table 4 Respondent's opinion on reason for air pollution

Reasons	No. of Respondents	Percentage
Engine vehicles	28	56
Factories	16	32
Petroleum	06	12
Total	50	100

From the table 4, it is observed that 56 per cent of the respondents have the opinion that air pollution is caused mostly through engine vehicles and less through petroleum.

Table 5 Respondent's awareness towards the diseases caused by air pollution

Type	No. of Respondents	Percentage
Aware	50	100
Unaware	00	00
Total	50	100

From the table 5, it is observed that 100 per cent of the respondents have awareness towards the diseases caused by air pollution.

Table 6 Respondents affected by air pollution

Effect	No. of Respondents	Percentage
Sinus	06	21.43
Allergy	06	21.43
Wheezing	12	42.86
Sneezing	02	07.14
Cough	02	07.14
Total	28	100.00

From the table 6, it is observed that 42.86 per cent of the respondents are affected by wheezing, 21.43 per cent affected by sinus and allergy, less per cent that is 07.14 affected by cough and sneezing.

Table 7 Respondents possess smoke emission control certificate

Certificate	No. of Respondents	Percentage
yes	24	48
No	26	52
Total	50	100

From the table 7, it is observed that more than half per cent of the respondents do not have smoke emission control certificate.

Table 8 Respondent’s period of renewal for the certificate

Period	No. of Respondents	Percentage
Once in 6 months	02	08.33
Once in a year	06	25.00
Once in 2 years	02	08.33
No renewal	14	58.34
Total	24	100.00

From the table 8, it is observed that 58.34 per cent of the respondents do not go for renewal and minor percent that is 2 per cent are renewing once in 6 months and once in two years

Table 9 Efforts taken by the respondents to reduce air pollution

Effort	No. of Respondents	Percentage
Minimum use of vehicle	02	04
Avoid using plastic bags	04	16
Planting trees	04	16
Do Not take effort	40	80
Total	50	100

From the table 9, it is observed that 80 per cent of the respondents do not take effort to reduce air pollution, 16 per cent avoiding using plastic bags and planting trees and some of them reduce the usage of vehicle.

Yule’s co-efficient

Yule’s coefficient is used to find the association between the respondents affected by air pollution and effort taken by the respondents to reduce air pollution.

Table 10

	A(affected)	A(not affected)	Total
B(Taken effort)	06	04	10
B(Not taken effort)	22	18	40
Total	28	22	50

Q = 0.1020	Little degree of positive association
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From the table 10, it is clear that there is a little degree of positive association between the respondents affected by air pollution and effort taken by the respondents to reduce air pollution.

Chi-square test

Chi-square test has been used in the context of sampling analysis for comparing variance to a theoretical variable.

Null Hypothesis There exists no relationship between Gender and Smoke emission control Certificate possessed by the respondents.

Table 11

Calculated value	3.4476
Table value	3.84
Degree of freedom (c-1) (r-1)	1
Calculated value < Table value	Accepted

From the table 11, it is observed that there exists no relationship between Gender and Smoke emission control certificate possessed by the respondents

Null Hypothesis There is no relationship between Gender and air pollution affected persons

Table 12

Calculated value	0.4034
Table value	3.84
Degree of freedom (c-1) (r-1)	1
Calculated value < Table value	Accepted

From the table 12, it is observed that there exists no relationship between Gender and air pollution affected persons.

Garrett Ranking Method

Garrett Ranking Method is used to rank the factor that are considered by the respondents at the time of selection of vehicle.

Table 13 Factors considered for the selection of vehicle

Factors	I	II	III	IV	score	Mean score	Garret rank
Reasonable price	2190	336	344	162	3032	758	I
Vehicle comfort	1168	1120	430	108	2826	706.5	II
Pollution free vehicle	146	448	172	972	1738	434.5	IV
Long life	146	896	1204	108	2354	588.5	III

It is found that the vital factors considered by the respondents at the time of selection of vehicle is first reasonable price, second vehicle comfort, third pollution free vehicle and last is long life of the vehicle.

Summary of Findings

1. 68% of the respondents are male.
2. 40% of the respondents are of 40-50 years.
3. 84% of the respondents own Two-wheeler
4. 56% of the respondents have the opinion that air pollution is caused mostly through engine vehicles.
5. 100% of the respondents are aware of the diseases caused by air pollution.
6. 42.86% of the respondents are affected by Wheezing.
7. 52% of the respondents do not have smoke emission control certificate
8. 58.34% of the respondents do not go for renewal.
9. 80% of the respondents do not take effort to reduce air pollution.
10. There is a little degree of positive association between the respondents affected by air pollution and effort taken by the respondents to reduce air pollution.
11. There exists no relationship between Gender and Smoke emission control certificate possess by the respondents
12. There exists no relationship between Gender and air pollution affected persons.
13. Reasonable price is the main factor considered by the respondents at the time of selection of vehicle.

Recommendations

1. Regional Transport Office should create strict rules and regulations for holding smoke emission control certificate
2. Traffic inspectors should be made to check the renewal of Smoke emission control certificate periodically

3. Effective programs can be made by the Government to protect the environment
4. Public interest can be created to make their lifestyle and daily practices less impact upon air pollution.
5. Conversion of engine vehicle to electric vehicles possibly reduces air pollution

Conclusion

The study revealed that there is awareness among the road vehicle users towards air pollution but they ignore to take measures to reduce air pollution. Though some are affected in various ways the effort taken by them is minimum. From the study we come to know that people are not ready to protect the society and the environment and they just look for their comfort than their health.

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