Reducing Air Pollution for Greening Cities

Presented By
Afrin Mahbub
Research Associate
Centre for Policy Dialogue (CPD)

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"Blue Skies, Healthy Lives: Youth Voices for Clean Air in Bangladesh"

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Outline

1. Introduction

2. Findings of the survey for air pollution

3. Conclusion

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1. Introduction

1.1 Overview

- Air pollution has emerged as a pressing concern in Bangladesh and a major environmental and public health issue in recent years.
- Leads to severe health risks, including respiratory, cardiovascular, and mental health disorders.
- In addition, air pollution also increases healthcare costs and reduces productivity through work absences.
- Dhaka is among the most affected cities, with air quality deteriorating throughout the year.
- It has been observed that pollution peaks during the winter season, with only slight improvement during the monsoon.
- Major contributors include construction, brick kilns, vehicular emissions, and climate-related factors.
- In light of the pressing concerns related to air pollution in Bangladesh, the Centre for Policy Dialogue (CPD) undertook a research study in 2023, where a survey was conducted among 500 households within the parameters of Dhaka North and South City Corporations.
- The goal of the survey was to generate evidence and ideas for policymakers, academics, journalists and others looking to understand the relationship between air pollution and the economy of Bangladesh and develop policies to tackle these problems.
- This survey explored residents' perceptions of the scale of air pollution, their understanding of the causes and impacts of pollution and their willingness to change their own behaviour or support policies with the aim of reducing air pollution in the city.

1.2 Key findings of air pollution

76%

More than

respondents thought that air pollution in Dhaka city became much worse in the past 2-3 years

On average, individuals in Dhaka city are stuck in traffic for

46 minutes

out of every 2 hours.

On average, individuals in Dhaka city spent

BDT 4,000

per year to diagnose and treat symptoms associated with air pollution.

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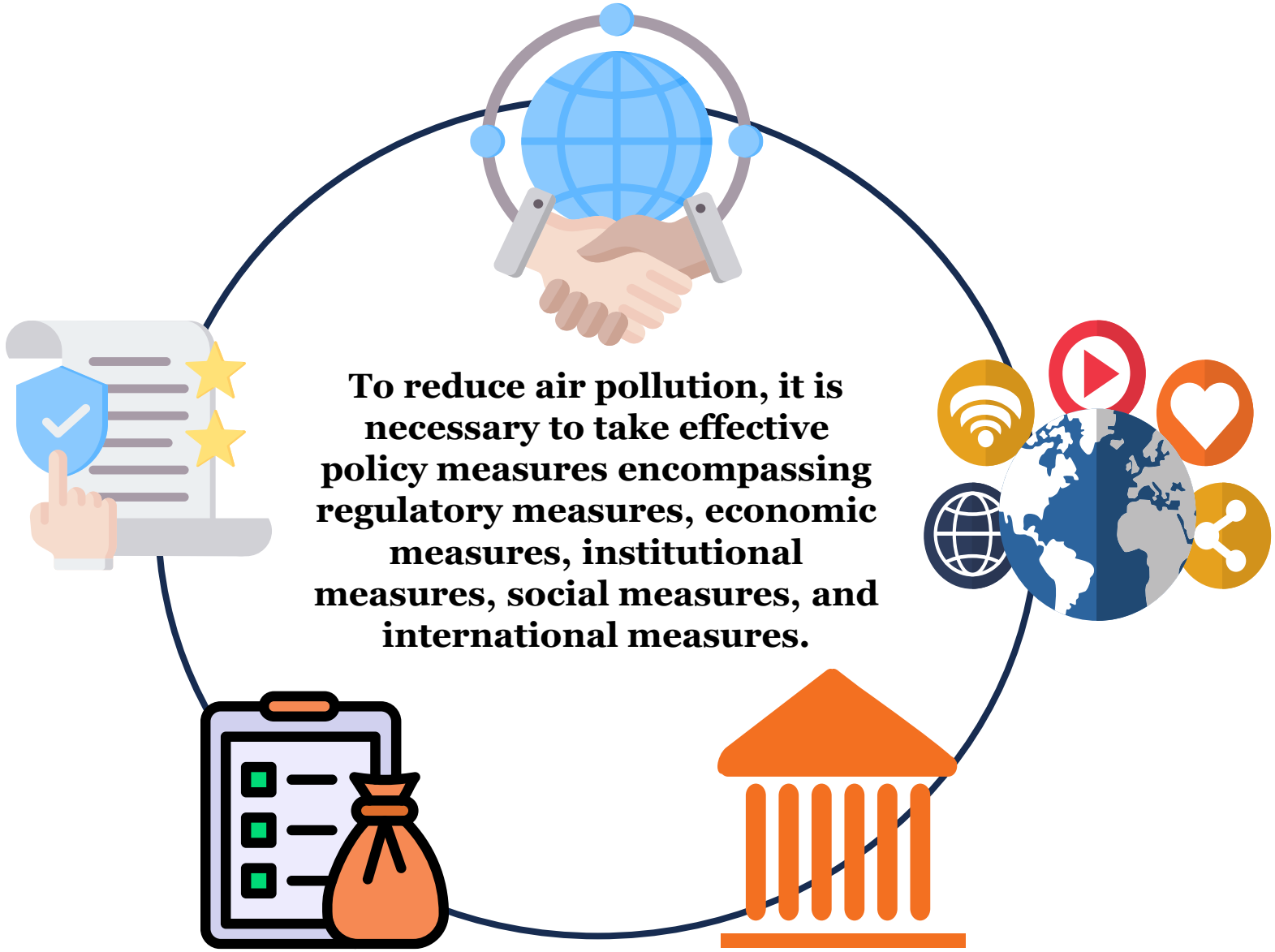
1.4 Key measures

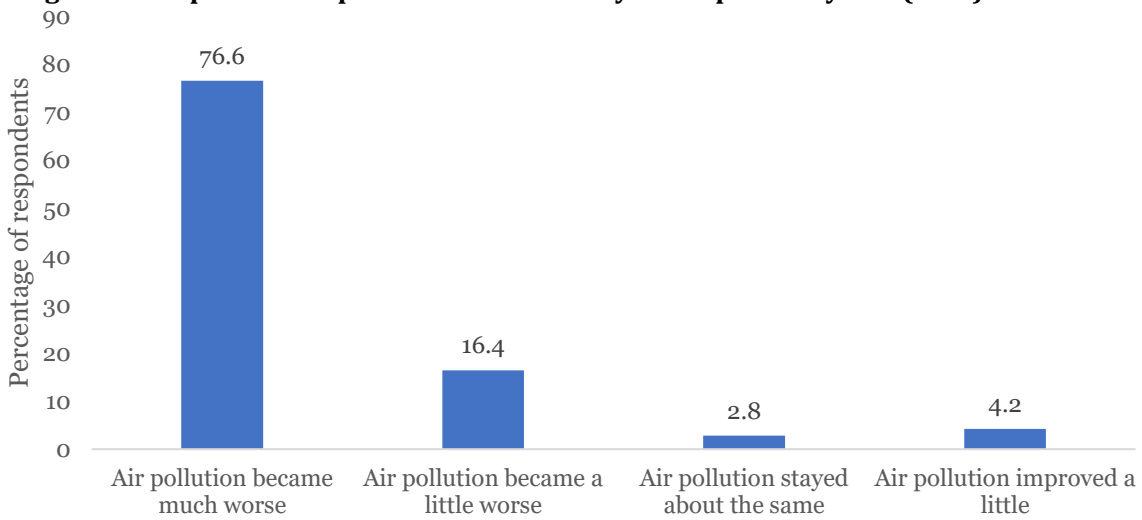


2. Findings of the survey for air pollution

2.1 Perception of air pollution

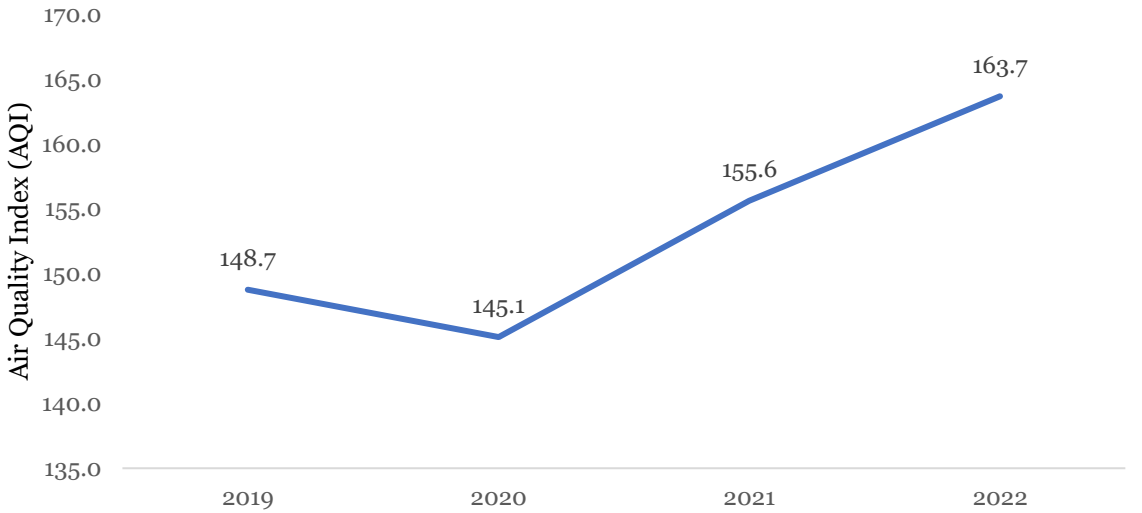
- **More than 76%** thought that air pollution in Dhaka city had become much worse in the past 2-3 years
- In contrast, **only 7%** believe air pollution has stayed the same or improved a little
- **The empirical data shows that air pollution increased by 13% since 2020,** which indicates that the respondents' perception is in line with reality
- These findings can be attributed to a combination of factors such as rapid urbanisation, industrialisation, vehicular emissions, inadequate environmental regulations, and weather conditions

Figure: Perception of air pollution in Dhaka city in the past 2-3 years (in %)



Source: Authors' own illustration based on survey data

Figure: Annual Air Quality Index (AQI) Trends from 2019 to 2022 in Dhaka City



Source: Authors' illustration using data from U.S. Embassy Bangladesh Air Quality (AirNow, 2022)

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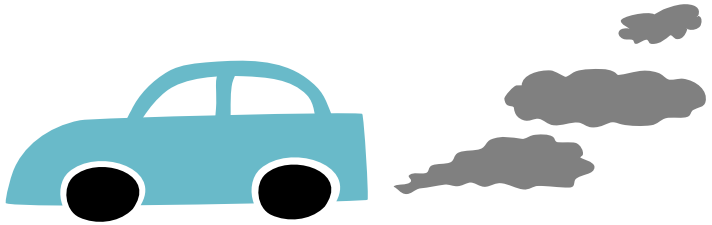
2.1 Perception of air pollution



77% respondents believed **vehicular emission** is the main reason of air pollution Dhaka

Nearly **10%** thought **construction sites** contributed to air pollution in Dhaka the most

4% respondents thought **brick kilns** is the major source of air pollution

Perceived sources of air pollution

Almost **9%** respondents thought **burning waste** was the main cause of air pollution in the city

- However, in reality, **brick kilns** release the highest concentration of fine particles, accounting for about **58%** of the total emissions into the air in Dhaka city

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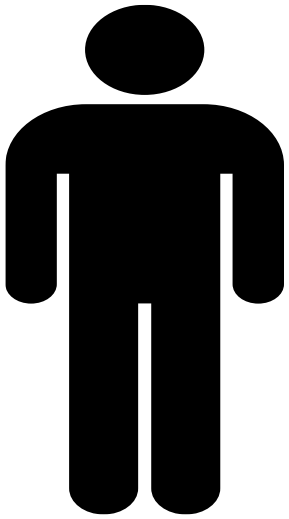
2.1 Perception of air pollution

Perceived incentives to reduce the usage of private vehicles

Only **5% females** agreed that raising public awareness on the health and environmental problems associated with car use could make them reduce using their car, and **13% female vehicle owners** stated that they would reduce using cars if the transportation was improved.

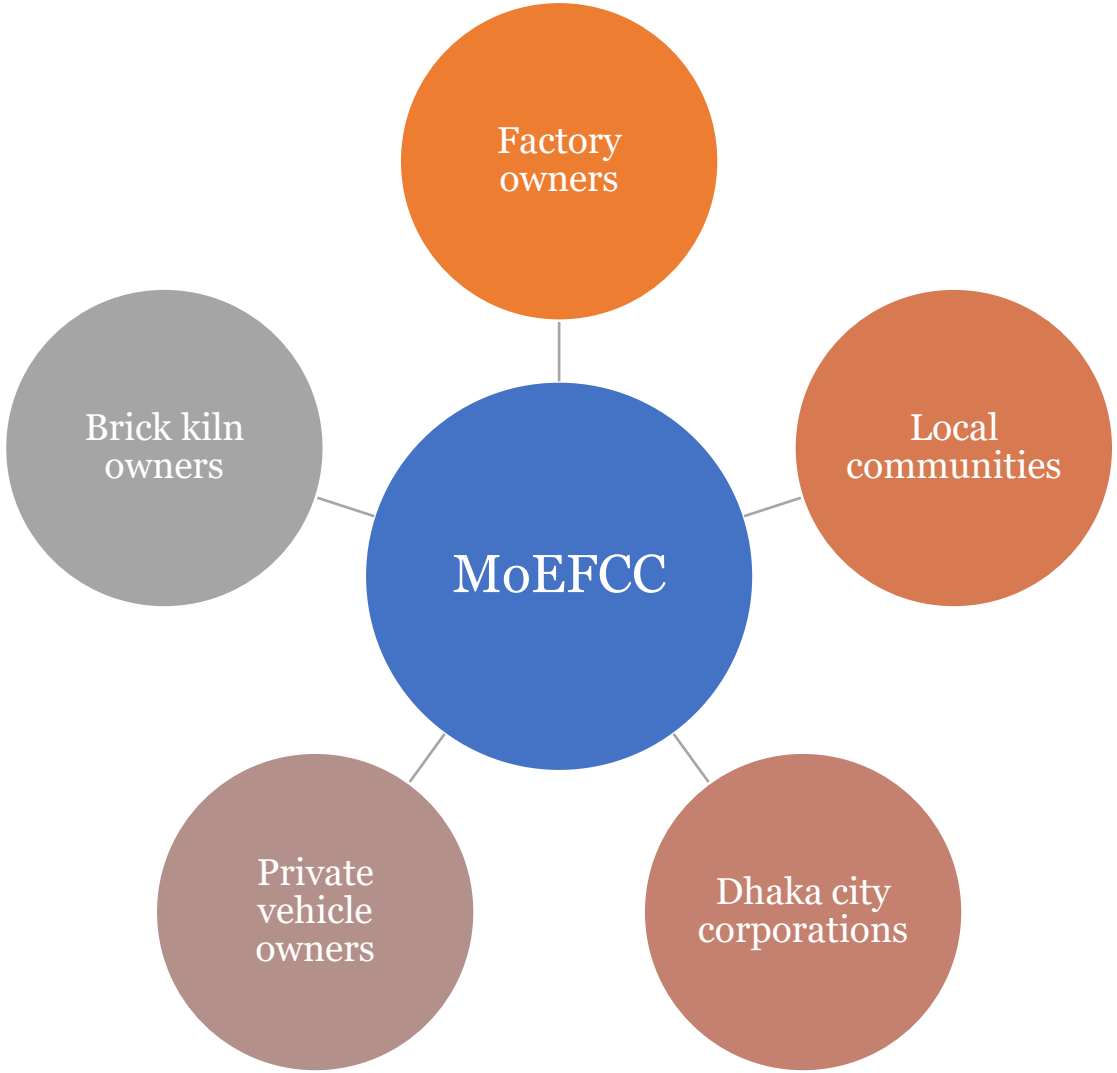


Whereas **16% males** agreed that raising public awareness on the health and environmental problems associated with car use could make them reduce using their car, which indicates that they may be more responsive to awareness campaigns in this context. Moreover, **32% male vehicle owners** showed interest to reduce using their cars if the mass transportation facility was improved.

2.1 Perception of air pollution

- More than **33%** of the respondents thought that combating air pollution would not be possible without the collaboration of both the private and public sectors.

- It is the responsibility of everyone, including the Dhaka City Corporation, the **Ministry of Environment, Forest and Climate Change (MoEFCC), factory and brick kiln owners, private vehicle owners, and local communities.**



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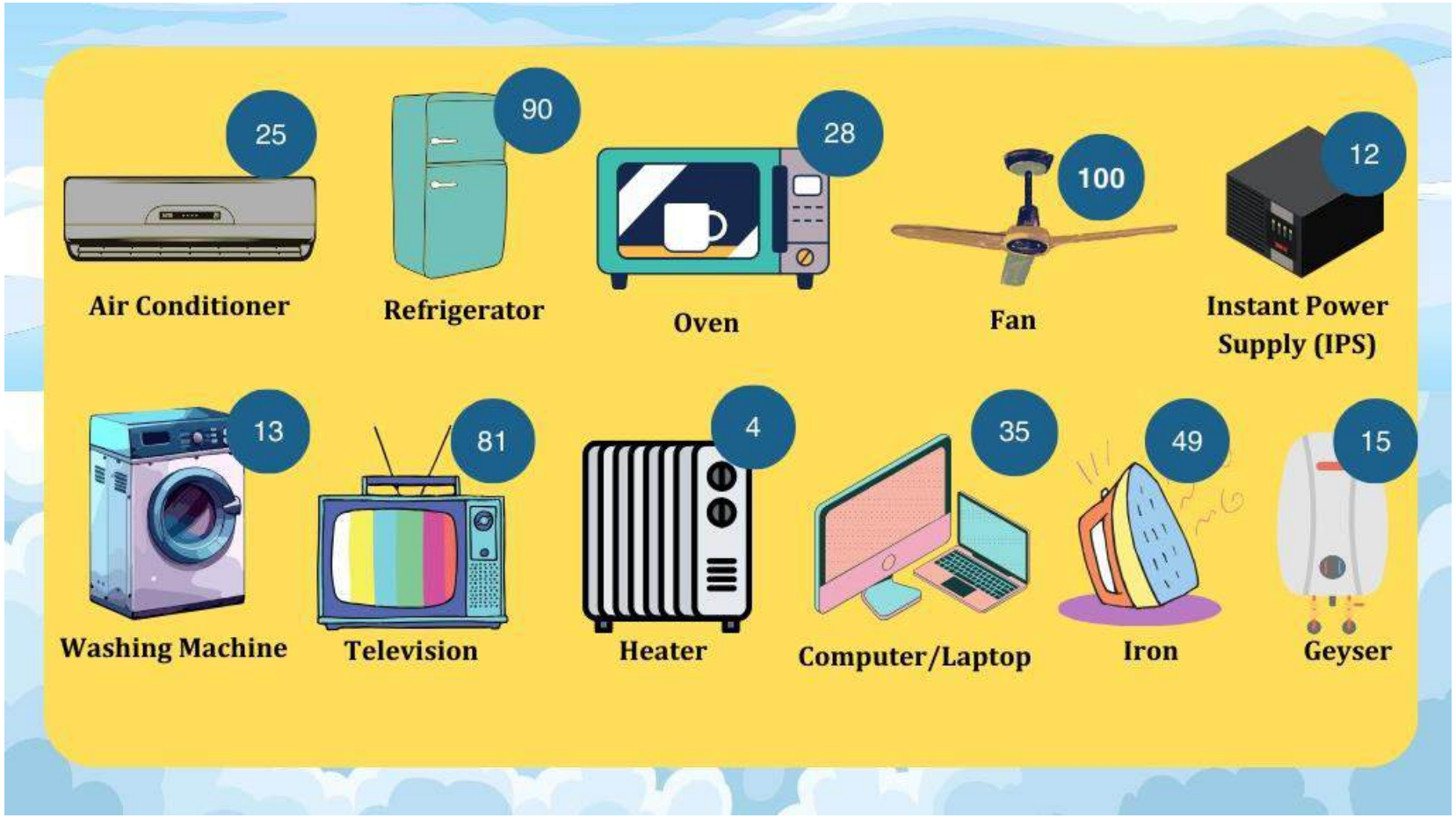
2.2 Household practices

- As energy generation from fossil fuels is a significant factor in air pollution, an inventory of electronic appliances was recorded with the aim of gaining insights into the households' indirect contributions to air pollution in Dhaka city.
- Therefore, the more energy-intensive appliances a household owns, the greater its indirect contribution to the air pollution generated at the power plant.

Figure: Electronic appliances owned by households (in percentage)



2.2 Household practices

- ACs equipped with inverters consume less energy and therefore emit less carbon dioxide (CO_2) in the atmosphere
- However, around **24%** of the households owned ACs that did not have an inverter
- All households had a fan, and the majority of households had refrigerators and TVs.
- Whereas ownership of heaters and geysers in the households was rarely found, primarily due to the predominantly hot weather in Bangladesh
- Nearly **65%** of the households surveyed did not have an exhaust fan in their kitchens and **39%** of households had at least one member who smoked cigarettes, cigars, e-cigarettes, vapes, hookahs, or pipes, **which poses a higher threat of being affected by indoor air pollution**
- In June 2023, the average electricity bill of the households was **BDT 2,118** and the **maximum electricity bill was BDT 25,000.**

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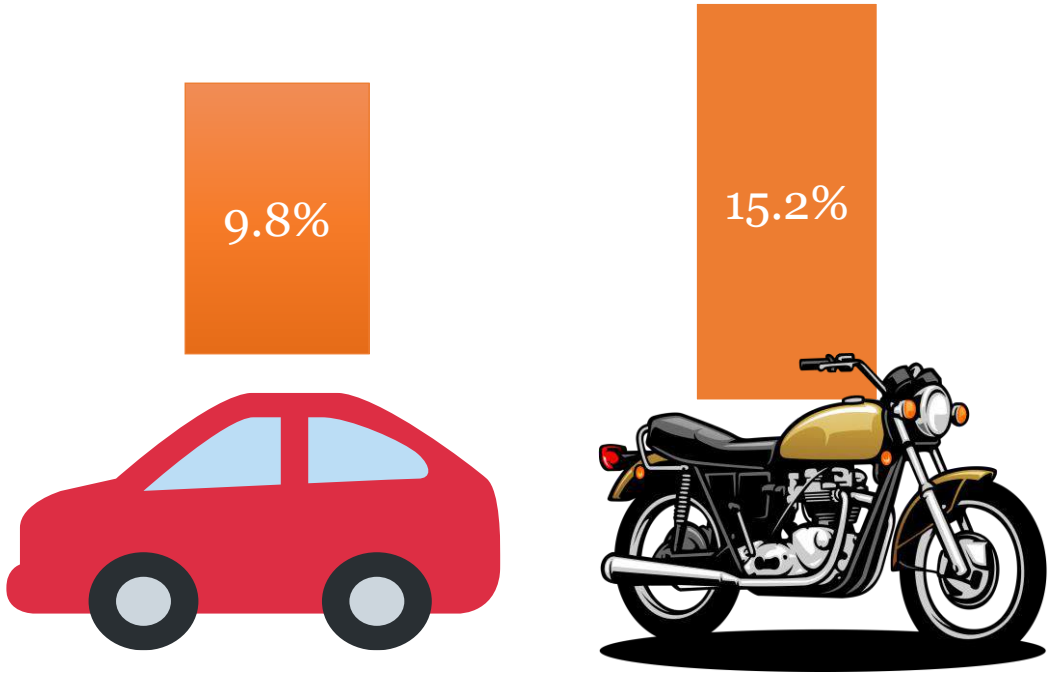
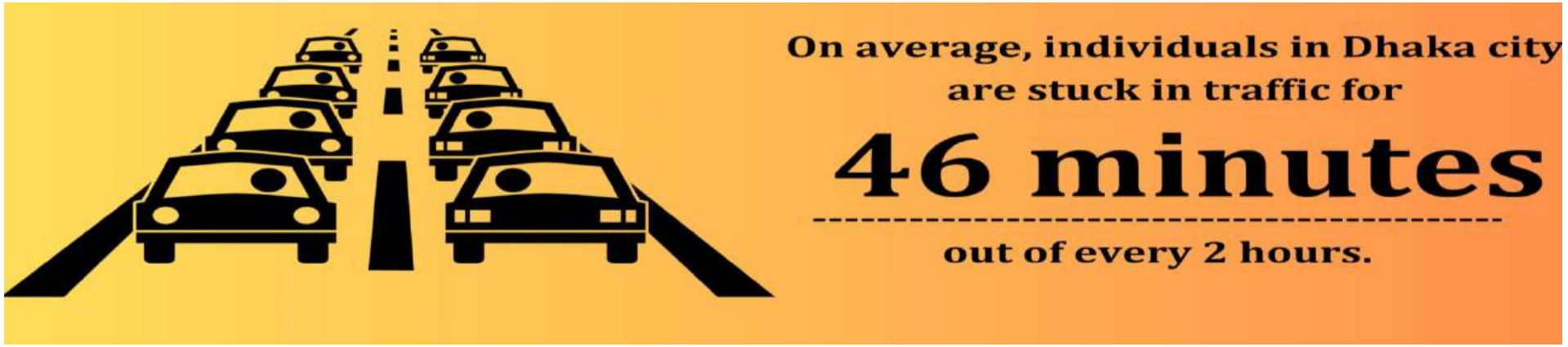
2.2 Household practices

- According to the survey, city dwellers in Dhaka waste approximately **276 hours a year** just sitting in traffic congestion

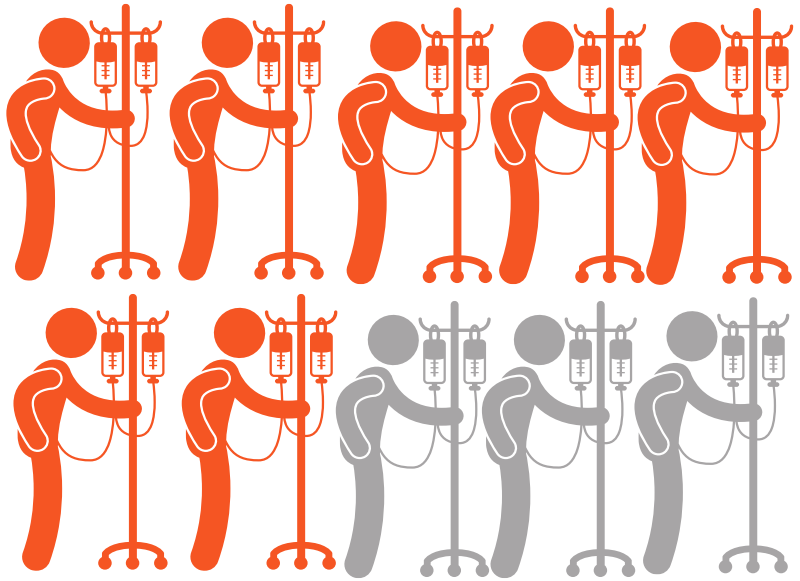
Figure: Vehicles owned by households

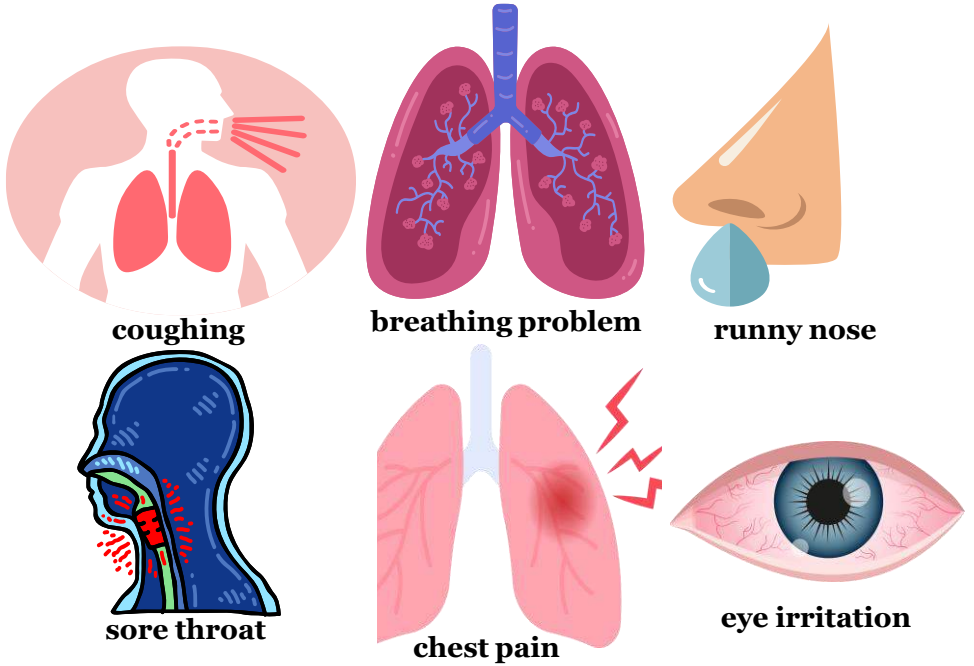




2.3 Health concerns

- Air pollution increases the risk of stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma, the primary symptoms of which include **coughing, breathing problem, runny nose, sore throat, chest pain** and **eye irritation**





- Approximately **7 out of 10 respondents** reported that they have suffered from these symptoms associated with air pollution in the last one year.

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2.3 Health concerns

- Having a **sore throat and eye irritation** seemed to be more common in **women** than in men
- **Males** were more likely to have **chest pain** than females
- Overall, **51%** of the sick members were **female**
- **Children under five years and elderly people above 65 years** are considered **vulnerable age groups to air pollution** and on average, **20%** of sick family members were belong to these **vulnerable age groups**
- The most common health problems among the vulnerable age group are **runny nose and breathing problem**
- The study also found out that **residing with someone who smokes in the same household increases the risk of getting affected by these symptoms by 86%**

Figure: Symptoms attributed to air pollution by gender (in percentage)

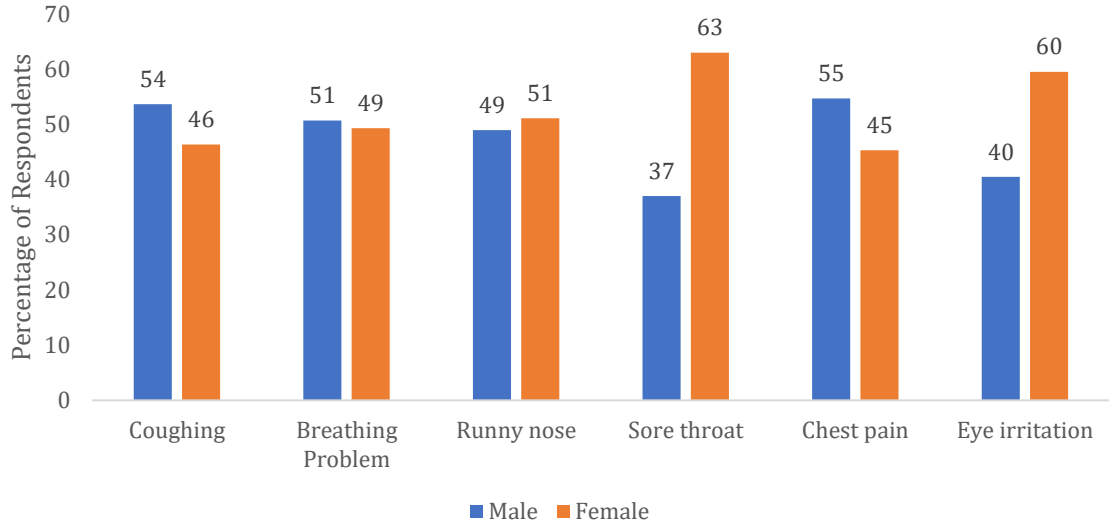
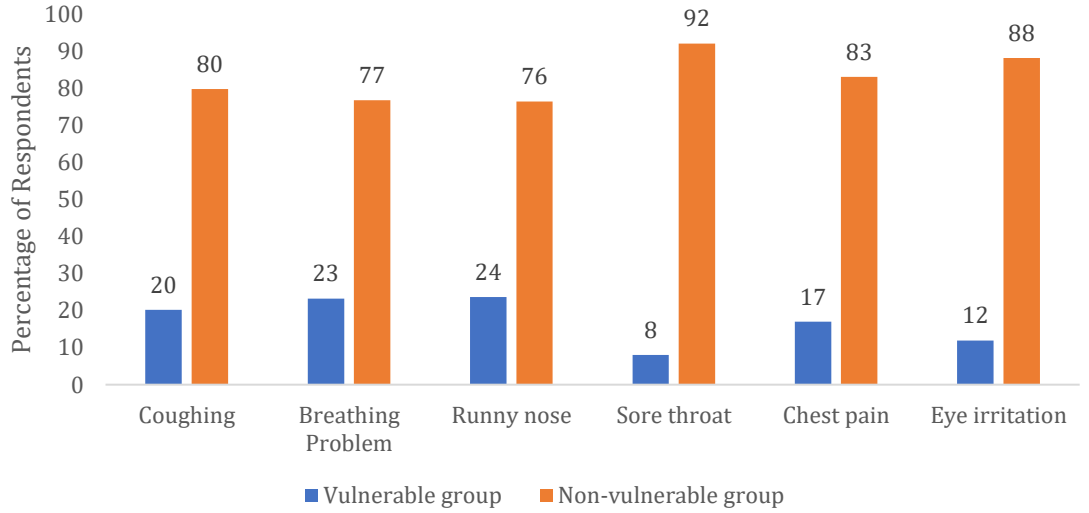


Figure: Symptoms attributed to air pollution by age group (in percentage)



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2.3 Health concerns

- In total, individuals in Dhaka city took **2,117 days** off from work and school in the last year due to the symptoms attributed to air pollution.
- Moreover, individuals tend to take more days off for **breathing problem** than any other symptoms attributed to air pollution

- On average, individuals spent **BDT 4,000** per year to diagnose and treat symptoms associated with air pollution.
- Whereas **the government's budget allocation on health per person was BDT 2,228 in FY24**

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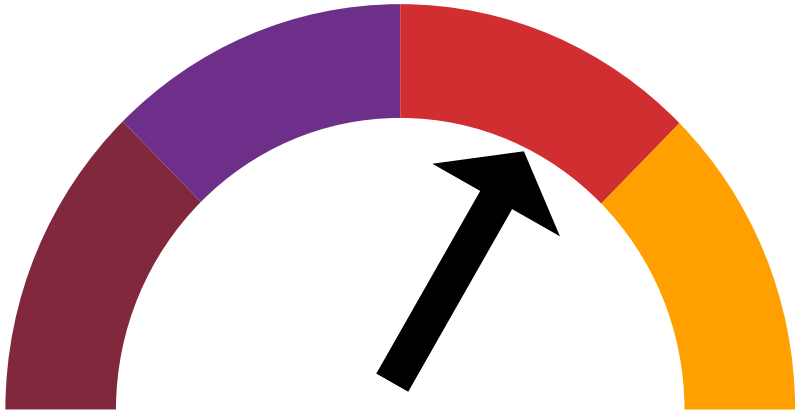
2.4 Awareness

More than **90%** of the respondents expressed their concerns regarding the rising air pollution in the cities of Bangladesh.



40% of the respondents rated the air quality in their neighbourhood as **unhealthy**.

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3. Conclusion

3.1 Conclusion

- Residents' high levels of concern with regard to air pollution are not matched with the necessary behavioural changes to reduce their contribution to the problem.
- Awareness of the problem has not yet developed into action.
- This points to the need for government and industry action to enable people to make more environmentally-friendly choices.
- Sufficient investment in sustainable alternatives, including an affordable and comprehensive public transit system, will be necessary to encourage people to play their part in reducing air pollution within Bangladesh's cities.
- To motivate individuals to begin to change their habits, these "carrots" may need to be matched with "sticks" to discourage people from sticking to their old behaviours.
- Options should be explored, including measures to discourage the use of private vehicles.
- Alongside these initiatives, the policymakers must also continue to work with the private sector to tackle industrial issues such as irresponsible construction practices and investment in sustainable alternatives to fossil fuels.

4. Guiding Questions

4.1 Guiding questions

1. What are the key challenges posed by air pollution in Bangladesh?
2. How does poor air quality affect the education, productivity, and overall well-being of young people?
3. What role can youth and academic institutions play in raising awareness and driving change?
4. Which policy interventions and community initiatives could make a tangible impact on air quality?
5. How can Bangladesh strengthen collaboration between science, policy, and youth engagement for cleaner air?

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