

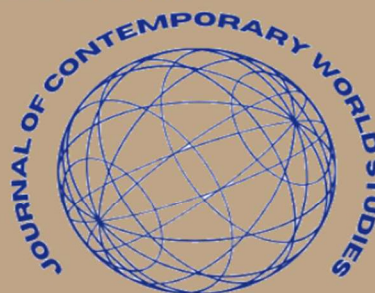
ISSN:
3030-3311



Volume|3 Issue|4 April 2025

JCWS

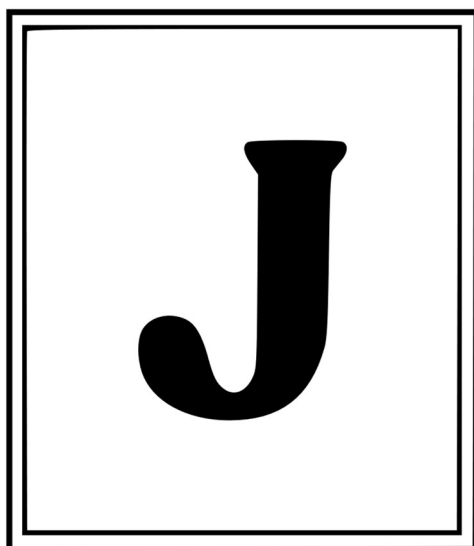
Journal of Contemporary
World Studies



2023

<https://bestjournalup.com/index.php/jcws>

VOLUME | 3 ISSUE | 4 | APRIL | 2025



JCWS

CAUSES, NEGATIVE IMPACTS, AND SOLUTIONS TO AIR POLLUTION IN TASHKENT CITY

Ungalov Akmal Navruzovich

Lecturer at Oriental University



ANNOTATION:

This article explores the increasing problem of air pollution in Tashkent, identifying its major causes, environmental and health impacts, and proposing actionable solutions. Based on environmental monitoring data, public health surveys, and international standards, the study highlights the need for sustainable urban planning, modern transport policies, and improved air quality management in Uzbekistan's capital.

KEYWORDS:

air pollution, urban environment, emissions, health impact, sustainable transport, air quality management.

Accepted Date:

July 1, 2025,

Published Date:

July 2, 2025

Journal Website:

<https://bestjournalup.com/index.php/jcws/issue/view/jcws4>

License



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Introduction

Tashkent, the capital city of Uzbekistan, is a rapidly growing urban center with increasing population density, industrial activities, and vehicle use. These factors have led to a steady decline in air quality, with seasonal peaks during winter due to household heating and stagnant air conditions.

The degradation of air quality poses serious risks to human health and ecological balance. This study investigates the main sources of air pollution in Tashkent, evaluates their impacts on public well-being, and suggests scientific and policy-based interventions to improve air quality.

Literature Review

- **Kholmukhameedova D. (2021)** highlights transport emissions as the dominant contributor to air pollution in Tashkent.
- **UNEP and WHO reports (2020–2023)** stress the health risks associated with PM2.5 and nitrogen dioxide in urban environments.

- **Abdurakhmanov A. (2019)** analyzes industrial pollutants and deficiencies in air monitoring systems in Uzbekistan. These sources confirm that mobile sources, heating practices, and industrial output remain primary pollution factors in the region.

Research Methodology

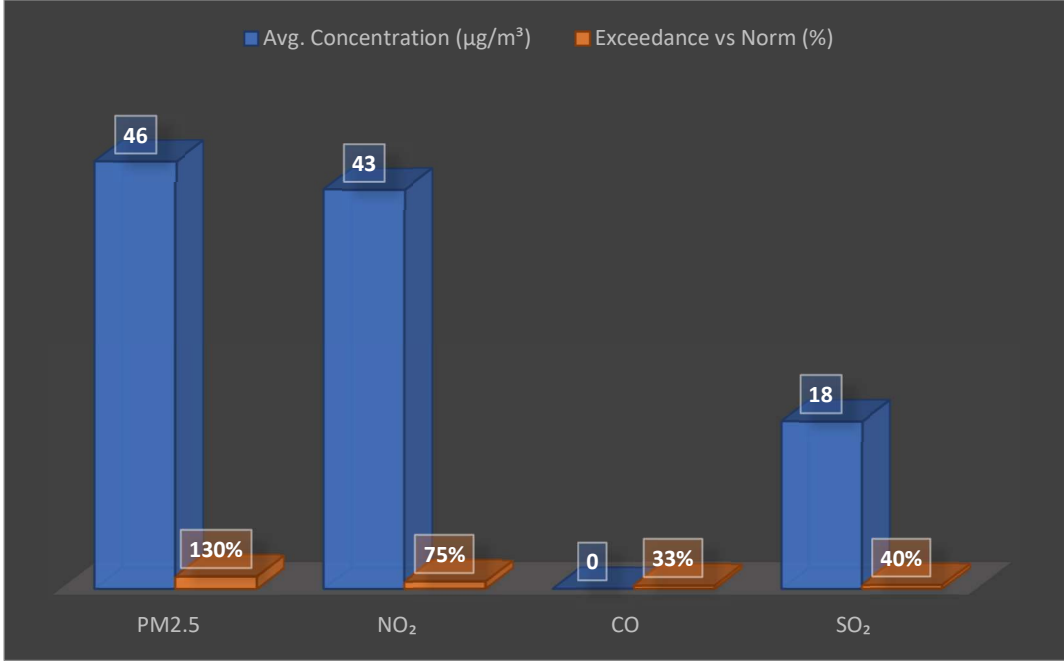
This study collected data from four districts of Tashkent: Olmazor, Yunusabad, Sergeli, and Yakkasaroy.

Methods included:

- Analysis of air samples from state monitoring points (PM2.5, NO2, SO2, CO)
- Mapping via GIS tools
- Public health survey with 350 residents on symptoms and awareness
- Data from the Ministry of Ecology and Uzhydromet used for cross-reference

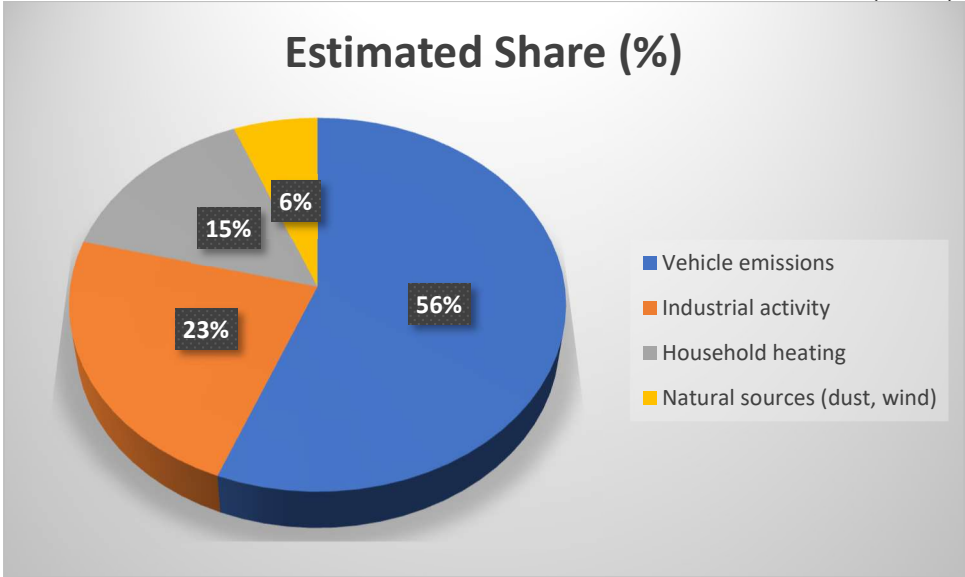
Analysis and Results

Table 1. Average Annual Concentration of Major Pollutants in Tashkent (2023)



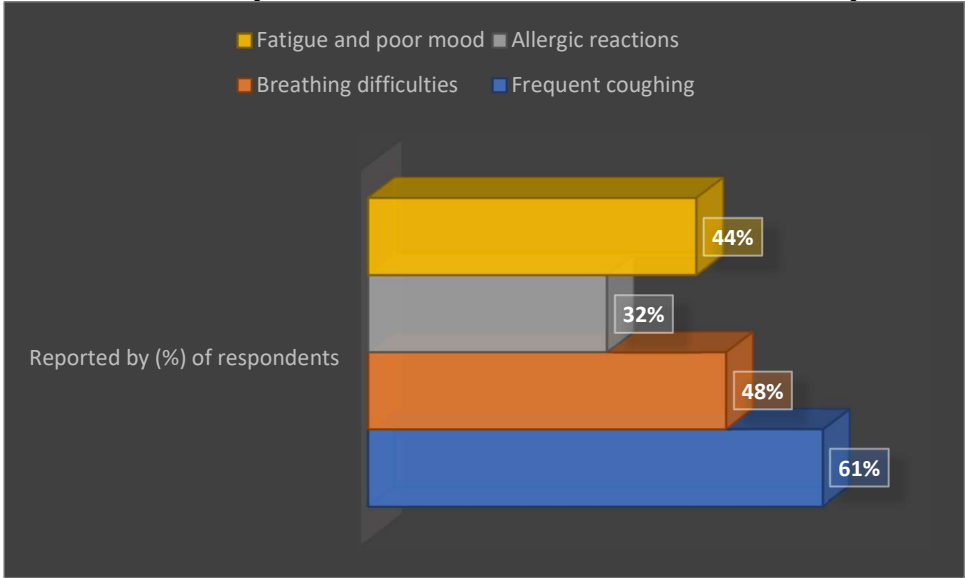
PM2.5 levels are the most critical, significantly surpassing WHO limits and increasing respiratory disease risk.

Table 2. Estimated Share of Air Pollution Sources in Tashkent (2023)



Commentary: Traffic is the largest contributor to air pollution, particularly in central and southern districts.

Table 3. Public Survey on Health Effects Linked to Air Quality



Commentary: A clear link between air quality and physical well-being is evident. Public concern is high.

Conclusion

Air pollution in Tashkent is a serious environmental and public health issue, driven primarily by excessive traffic, outdated industrial processes, and inefficient heating systems. If left unchecked, the problem will deepen as urbanization continues.

To mitigate this issue, the following solutions are recommended:

- **Modernize public transport** and reduce reliance on private vehicles
- **Expand urban green spaces** to naturally filter pollutants
- **Enforce emission controls** on industries and introduce eco-filter systems
- **Promote clean energy** sources (e.g., electricity, solar power) in households

- **Digitalize air quality monitoring**, offering public access to real-time data

These strategies will help restore cleaner air and improve the quality of life for Tashkent's residents.

References

1. Kholmukhamedova, D. (2021). *Ecological Problems in Urban Uzbekistan*. Tashkent: Ekologiya.
2. UNEP Report. *Air Quality in Central Asian Cities*, 2023.
3. WHO. *Ambient Air Pollution Global Update*, 2023.
4. Abdurakhmanov, A. (2019). *Atmospheric Pollution and Chemical Monitoring*. Tashkent: Fan.
5. Ministry of Ecology and Environmental Protection of the Republic of Uzbekistan (2023).
6. Uzhydromet (2023). *Air Quality Bulletin for Uzbekistan Cities*.