

Review of: "Evaluation of Ambient Air Quality Levels at Various Locations within Lead City University, Ibadan"

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Potential competing interests: No potential competing interests to declare.

General comments

The manuscript needs major revision, especially chapter 2, which needs to be rewritten and restructured. There are no conclusions.

Specific Comments

Keywords: Suggested change from "outdoor air quality" to "ambient air quality."

1.0 Introduction:

Typo: (Brook, R. D. et al. (2010) in the 1st paragraph.

Check (Oguntoke, O. et al. (2019) in the 1st paragraph.

Particulate Matter (PM) in the 4th paragraph should be spelled as particulate matter.

PM₁₀, referring to particles with a diameter of 10 micrometers or less, and PM_{2.5}, referring to particles with a diameter of 2.5 micrometers or less, should be defined using aerodynamic diameter since PM is in varying shapes.

Nitrogen Dioxide (NO₂) in the 5th paragraph should be spelled as nitrogen dioxide.

Sulfur Dioxide (SO₂) in the 6th paragraph should be spelled as sulfur dioxide.

Carbon monoxide (CO₂) in the 8th paragraph refers to CO or CO₂? Please check.

The statement "Ozone is a reactive gas that can cause respiratory problems and aggravate asthma. It is formed when nitrogen oxides and volatile organic compounds (VOCs) react in the presence of sunlight" in the 8th paragraph is redundant with info stated in the 7th paragraph. It is suggested to omit.

(World Health Organization. (2019). in 9th paragraph should be (World Health Organization. (2019)).

It is suggested to rewrite/rearrange the following sentence so that it would imply the monitoring work is carried out to determine whether air quality is abiding by the standards or in opposition. "It is crucial to monitor and regulate air pollutants to safeguard human health and protect the environment. This involves the collection of air quality data through

monitoring stations and the establishment of air quality standards and guidelines by regulatory agencies. These standards and guidelines help to limit the concentration of pollutants in the air and minimize their adverse effects on human health and the environment.”

1.2. Specific objectives

Please check the abstract; it is contradicted since the abstract stated only PM2.5 will be monitored, while the objectives stated PM10 and PM2.5 were monitored.

1.3. Research Questions

It is suggested to rearrange research questions no. 3 and no. 4 in the same order as the specific objectives to avoid confusion.

1.4. Scope of study

Please specify the study period.

2. Materials and Methods

The write-up for this subchapter is quite confusing since there are so many sub-subtopics which make the information redundant. It is suggested to rewrite this 2. Materials and Methods into three sub-topics only:

2.1 Study area

2.2 Data Acquisition (include sampling design, equipment and data collection procedures for each parameter, QAQC)

2.3 Data Analysis

2.1. Study area

It is suggested to add weather/climatic conditions as well as population of the study area.

Authors also can consider adding information regarding traffic and industrial establishments in the surrounding area since they would be possible sources of air pollutants in the study area.

2.2.3. Sampling Frequency and Duration

Specify the exact time of sampling.

2.3. Selected Air Quality Parameters

It is suggested to combine the info stated in this subtopic with 2.2.2. Selection of Air Quality Parameters to avoid redundancy.

3. Results

Please quote Table 1-18 and Figure 1-2 in the text before tables and figures.

Please add a unit for each parameter in Table 2 - Table 17.

PM in Table 2 - Table 18 refers to PM10 or PM2.5, or a combination? Please specify.

Please use consistent decimal points in Table 17 and Table 18.

The result stated in “From Table 16, morning temperatures in the data set range from a relatively mild 23.7°C to a warmer 29.2°C. These values reflect the diversity of climates or geographical locations represented in the data” is not in line with Table 16. Please recheck.

This research is similar to the study conducted by Green and Williams in an educational institution, which demonstrated morning CO₂ levels ranging from 450 ppm to 800 ppm. Please add the year to Green and Williams.

In a study by Kumar & Dash in an urban area, morning PM levels were reported to vary from 9 µg/m³ to 18 µg/m³. Add the year to Kumar & Dash.