



REVIEWER'S REPORT

Manuscript No.: IJAR- 57922

Title: Field characteristics and aspects of the Sedimentology of the Lokoja Basal Sandstone in the Bida Basin, Nigeria: Implications for Paleodepositional Environment.

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity			✓	
Significance			✓	

Reviewer Name: **ANAPANA GOPAL**

Reviewer's Comment for Publication.

General Comments

The manuscript investigates the sedimentological characteristics, lithofacies, grain-size attributes, and depositional environment of the Lokoja Basal Sandstone exposed along the Okene–Abuja highway in the Bida Basin, Nigeria. The study contributes valuable field observations and sedimentological data from relatively fresh road-cut exposures. The topic is relevant to regional geology, basin evolution, and paleoenvironmental reconstruction. However, the manuscript requires substantial revision to improve scientific rigor, data presentation, interpretation, organization, and language quality.

Content and Originality

Strengths

- The study focuses on an important stratigraphic unit within the Bida Basin.
- Detailed field descriptions, lithologic logs, sedimentary structures, and grain-size observations are presented.
- The interpretation of depositional environments based on facies relationships and sedimentary structures is relevant.
- Fresh road-cut exposures provide useful geological information that may not have been previously documented in detail.

Concerns

- The novelty of the study is not sufficiently emphasized relative to previous studies on the Lokoja Formation.
- Several conclusions repeat interpretations already reported in earlier literature.
- The study would benefit from a clearer statement of the specific scientific contribution and research gap.

Suggestions

- Explicitly identify how the present work advances understanding beyond previous studies.

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- Highlight new observations or datasets generated by this investigation.

Technical Quality

Strengths

- Field observations are extensive and supported by photographs and lithologic logs.
- Grain-size, roundness, sorting, and mineralogical characteristics are documented.
- The interpretation of fluvial depositional environments is generally supported by observed sedimentary structures and textural immaturity.

Minor Concerns

- The methodology lacks sufficient quantitative detail.
- Only fifteen samples were analyzed, which may limit the robustness of interpretations.
- Grain-size statistical results (mean, skewness, kurtosis, standard deviation) are mentioned but not adequately presented.
- No statistical treatment of grain-size data is provided despite citing Folk and Ward methods.
- Paleocurrent measurements are discussed qualitatively without presenting actual azimuth data, rose diagrams, or stereographic plots.
- Petrographic analysis is limited and lacks quantitative modal composition.

Suggestions

- Present complete grain-size statistical parameters.
- Include paleocurrent rose diagrams.
- Expand petrographic analysis with quantitative modal percentages.
- Provide more detailed facies classification and depositional models.

Language and Presentation

Minor Revision Required

The manuscript contains numerous grammatical, stylistic, and formatting problems.

Examples include:

- Repetitive wording.
- Long and awkward sentence constructions.
- Inconsistent terminology.
- Typographical errors throughout the manuscript.
- Inconsistent citation formatting.

Several sections require substantial English language editing to improve readability and scientific clarity.

Suggestions

- Undertake professional English editing.
- Standardize geological terminology throughout the manuscript.
- Improve figure captions and table descriptions.

Structure and Organization

Strengths

- The manuscript follows a recognizable scientific format.
- Geological background information is comprehensive.
- Field observations and laboratory results are presented separately.

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Concerns

- The Introduction is excessively long and contains material more appropriate for the Geological Setting section.
- Discussion is relatively short compared with the amount of descriptive data presented.
- Results and interpretation are not sufficiently integrated.
- Some figures and lithologic logs require improved clarity and labeling.

Suggestions

- Condense the Introduction.
- Expand the Discussion section.
- Improve figure resolution and annotation.
- Integrate results with regional geological interpretations.

References and Citations

Strengths

- The manuscript cites many classic and regional studies relevant to the Bida Basin.
- Foundational sedimentological literature is included.

Concerns

- Most references are relatively old, with limited inclusion of recent studies.
- Several references are dated and should be complemented with more recent research.
- Citation formatting is inconsistent.

Suggestions

- Include recent sedimentological and basin-analysis studies (last 10 years).
- Update literature related to fluvial depositional systems and provenance analysis.
- Standardize references according to journal style.

Overall Recommendation

The manuscript provides valuable field-based sedimentological observations from the Lokoja Basal Sandstone and supports a fluvial depositional interpretation. However, significant improvements are needed in methodology, quantitative analysis, discussion, language quality, and presentation. The scientific contribution would be strengthened by additional statistical analyses, paleocurrent data presentation, and deeper regional geological interpretation.

Final Decision:

Minor Revision