Review of: "Urban Green Infrastructure Planning for the Bangkok Metropolitan Region: An Empirical Study for Greenspace Expansion"

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Title of the Paper: Urban Green Infrastructure Planning for the Bangkok Metropolitan

Region: An Empirical Study for Greenspace Expansion

Reviewer Name: **Prof. K. Raghu Babu**

Abstract: Development of greenspace in cities by identification of suitable areas in public, private, and civil sectors, using AHP and GIS techniques, in the present study, was well depicted in brief in the abstract. Is good and sufficient.

Keywords: Sufficient

Graphical Abstract: Presentation of the study through a flow chart in the form of a graphical abstract is good and appreciated. Maps, beginning from layers to AHP, mixing with existing green spaces and OSM layers, then obtaining green space accessibility, are finely drawn.

1. **Introduction:** Need of the present work is well presented. Classifying the urban green spaces as natural and semi-natural areas, and defining them as parks, gardens, green corridors, and other vegetated spaces is well done with suitable references. Addressing the environmental consequences like biodiversity depletion, air and water pollution, escalating noise levels, heightened GHG emissions due to an increase in traffic, and augmented risk of runoff and flooding is also presented well.
2. **Study Area:** The study area, Bangkok, is well described with all its bearings and surroundings. Its major problems were also discussed, which are required in the present. The map is good and self-explanatory.
3. **Database and methods:** The databases required for conducting the present assessment (LULC, NDBI, basic infrastructural components) were well emphasised in this part.

   1. **Generation of Geospatial database for the identification of ideal sites for green space development:**The utilization of multispectral images, DEMs, and ArcGIS software through the AHP technique is well explained in this part. It is sufficient. The maps are good.
   2. **Conditioning factors in green space suitability assessment:**

      1. **LULC:** The procedures adopted for LULC classification were well explained and appropriate.

2. **NDBI:** The role of NDBI and its extraction procedure is explained appropriately.

3. **Distance from infrastructures:** The categorisation of distances from infrastructures into 4 different classes is appreciated.

4. **Land value:** Considering the land value in the selection of suitable sites for the green spaces is good, as the land acquisition is needed and needs to minimize the expenditure.

5. **Distance from the Roads:** The road network is vital in city planning; considering the distance from the roads is necessary to attract the visitors. The idea is appreciated.

6. **Proximity to traffic points**: Proximity to the traffic points is also an important consideration for the present study; it was well studied and presented.

7. **Distance from the ecotourism sites:** Liking the present greenspaces with the natural habitats and ecosystem will yield good results; it was well studied and presented in the present work.

8. **Distance from green spaces:** Keeping buffer zones around green spaces for future development is well studied.

9. **NDVI index:** It indicates green spaces and is helpful to identify and manage the non-vegetated surface in the study area.

10. **Distance from waterbody:** Waterbodies are complementary to the green spaces and vegetation. In the present study, the location of water bodies and their distance from the selected green spaces was well presented.

11. **Distance from coastline:** Green spaces also play a role as natural buffers against flooding, storm surges. Though there are no previous references, the study made in the present is appreciable.

12. **Distance from flooded areas:** The green spaces will also be considered as mitigating and managing factors on impacts of flooding. As mentioned earlier, there are no ready references for this kind of studies, this is a good approach.

13. **Urban elevational characteristics:** Higher elevation from the sea level will address ecological, aesthetic, recreational, and safety measures. This kind of study was also done in the present work.

14. **Slope features:** The slope features were also studied and well presented in the current work. Though there are no references, the work is appreciated.

3. **Standardising a few chosen criteria and developing an overlay model for site suitability modelling based on AHP:** Appropriate and good. The techniques adopted are appropriate.

4. **Validation of findings:** The techniques adopted for validation and the references are appropriate.

4. **Results**

1. **Requirements for the appropriateness of green space sites** MCDM technique for identification of suitable sites for green space will serve better, and the utilization of this will give good results. Further, the NDBI technique will give good results for LULC. The classification of the area based on the results of the above two techniques is appropriate and good.

2. **Land Suitability for Urban Green Space**: The green space locations obtained in the present study were made into 5 classes. The classification is appropriate, and the work done is good. The map is good and self-explanatory.

3. **Physical accessibility and traffic conditions-based suitability**: Prompt accessibility is the primary requirement for such projects. It was studied in the present work, and results obtained are good. The map is good.

4. **Land suitability validation**: The validation made in the present study through field surveys and by using Google Earth imagery is valid, and results obtained are good. The map is self-explanatory.

5. **Discussion**: Regional heterogeneity was studied in the present study for getting locations for green spaces. By applying various geospatial techniques, the suitable sites were found. All the techniques applied and results obtained are fine and appropriate.

6. **Conclusion**: Conclusions drawn out of all studies done in the present work are nicely framed and presented in this part.

References: Appropriate

The entire work is good, and the results obtained are fine, but there are insufficient references for certain techniques adopted in the present study, particularly the studies shown under sub-heading 3. All the statements made in a research article should be validated with suitable references. The sub-heading numbers given in the article are treated with certain negligence, as found in sub-heading 6 (number wrongly assigned).

Hence, I suggest **Accepted** after minor **Revision** by attending to the above suggestions.