Review of: "Ancient Trails of the Surigao Gold District: A Preliminary Baseline Predictive Model"

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Potential competing interests: No potential competing interests to declare.

The article titled "Ancient Trails of the Surigao Gold District: A Preliminary Baseline Predictive Model" focuses on creating a model of ancient trails in the Surigao gold district using Geographic Information Systems (GIS) and remote sensing data. Overall, the article appears to have a solid foundation and addresses an interesting issue. However, there are certain aspects that could help improve it. Therefore, it is recommended to provide more specific details in the methods section, a broader discussion of the results, and a strong conclusion summarizing the key contributions of the research. It is also important for the introduction to clearly lead to the research objectives. Additionally, referring to it as a predictive model seems somewhat risky and even ambitious, as what is conducted in this work is a calculation of optimal routes between various points based on a set of variables. Creating a predictive model requires different approaches that are not addressed in this study. A least cost path analysis is not a predictive model in itself. In any case, some of the issues to be improved in each section of the document are detailed below.

Introduction: The introduction establishes the article's context and presents the significance of the Surigao gold district. It also provides a brief review of relevant literature. However, the objectives are not clear, so it would be beneficial if the introduction concluded with a clear statement of the article's objectives. Some additional context and a more detailed presentation of the study area would help readers have a better understanding of the problem being addressed.

Methods: This section describes the methods used, including the use of GIS and remote sensing data, which is fundamental to understanding how the trail model was generated. However, it would be helpful to provide more details about the specific steps involved in the GIS and remote sensing analysis. This would aid readers in better comprehending the process.

It is not clear if the variables used to create the least cost paths (backlink and cost distance based on slope) have been weighted in any way or if they have been given equal importance in obtaining the LCP. It is implied that both variables were used to create a delineated line, as mentioned in the text: "The cost distance and backlink were then used to delineate the LCP polylines for both Jabonga-Kitcharao and Placer." It would be advisable to clarify this methodological point, as it is central to the article, to understand how the LCPs were obtained. More elaboration on the methodology employed is needed.

Results: The results section displays some of the images generated by remote sensing analysis and the identified trails. While the figures help visualize the results, in some cases, they are too broad and generic, causing the focus of the study

to be lost. It would be beneficial to include a more detailed discussion of the results and their relevance to the research.

Discussion: The discussion begins to address the results and raises interesting questions about the selection of hiking routes. It also mentions the need for future research, which is appropriate. However, expanding the discussion of the results presented in the previous section and relating them to the existing literature would be helpful.

Nonetheless, it's a commendable effort that holds the potential for improvement. I extend my congratulations to the author and offer the recommendation to consider a final push towards enhancing the article. With these refinements, I believe the research could fully realize its potential.