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Peer Review

Review of: "A QGIS Grid-Based Study to Understand the Relationship Between Land Surface Temperature and Greenness in Urban Areas"

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“I would like to express my sincere gratitude to the esteemed editor for entrusting me with the review of this article ”A QGIS Grid-Based Study to Understand the Relationship Between Land Surface Temperature and Greenness in Urban Areas". In my professional opinion, the Discussion and Conclusion sections would be more effectively structured as follows."

Ullah et al. (2023) observed a negative correlation between LST (Land Surface Temperature) and NDVI (Normalized Difference Vegetation Index) in Pakistan, **as well as** a negative relationship between LST and elevation. Similarly, Morsy and Hadi (2022), in a study conducted in Egypt, **found** that the built-up index exhibited a positive correlation with LST, **while** regression analysis with NDVI yielded a higher coefficient of determination. Ferreli et al. (2018) **reported** a significant relationship between NDVI and LST in Argentina, **a finding echoed by** Cambrussi et al. (2021), who identified a strong interaction between the two variables in southern Brazil. **Studies in India** further support these trends: Jaswal and Thakur (2023) **demonstrated** a positive association between lower temperatures and vegetation in Shimla, while Guha et al. (2020) **and** Chauhan (2023) observed strong negative correlations between NDVI and LST in Raipur and Alwar, respectively. Kandel et al. (2022) **highlighted** that urban areas exhibit higher LST compared to rural areas, alongside an inverse relationship between LST and NDVI. **Finally**, Anitha et al. (2023) **confirmed** an inverse relationship between NDVI and LST in Tamil Nadu, India.

Collectively, these studies indicate a consistent negative correlation between LST and NDVI (or vegetation) across diverse regions. **However, in contrast to these findings**, the present study observed a

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declining trend between LST and NDVI **that was not statistically significant**. This discrepancy **could be attributed to** factors such as the **temporal scope** of the study, which may influence the relationship between surface temperature and vegetation distribution. **Additional factors**, including localized climate change impacts or methodological differences, **might also play a role**. **Further research** is needed to explore these variables in greater detail.

Declarations

Potential competing interests: No potential competing interests to declare.