# Review of: "Could geographical features of green spaces influence physical exercise? Examining the roles of neighbourhood diversity and single status"

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## Introduction

The introduction of this paper provides a comprehensive overview of the existing literature on the connection between nature, green spaces, physical activity, and mental health. It effectively highlights the importance of nature connectedness, the positive impact of green spaces on public health, and the various ways in which green exercise can improve well-being. The introduction also presents a clear research gap, emphasizing the need to understand how geographical features of green spaces relate to physical activity among employed individuals.

The inclusion of references to relevant studies and meta-analyses strengthens the foundation for the research and supports the significance of the topic. However, it is important to note that while the introduction effectively presents the existing body of knowledge, it could benefit from a more structured and concise organization. To improve readability and accessibility, the introduction might benefit from a clear and logical flow, such as breaking down the content into subsections to outline the key points and research gaps.

Overall, the introduction successfully sets the stage for the study by emphasizing the importance of the topic and the research objectives. However, minor improvements in organization and structure could enhance its clarity and impact.

## Literature Review

The literature review in this paper provides a comprehensive overview of existing research on the relationship between green spaces, physical activity, and health, thereby effectively setting the stage for the study's hypotheses and research objectives.

## Strengths:

1. **Comprehensive Coverage:** The literature review is impressively comprehensive, summarizing a wide range of studies related to green spaces and health. It successfully covers various aspects of this topic, including cardiovascular health, emotional well-being, exercise, transportation modes, and socio-economic factors.

2. **Clear Hypotheses:** The review effectively leads to the formulation of clear and logical hypotheses that follow from the reviewed literature. These hypotheses are a key element in guiding the research and are well-grounded in prior

studies.

3. **Relevance to the Study:** The review's focus on green exercise and its impact on the health of full-time employees aligns well with the study's objectives, and it highlights the need to understand the complex relationship between green spaces and physical activity.

Suggestions for Improvement:

1. **Organization and Flow:** While the review provides a wealth of information, its structure and flow could be improved for better readability. Consider breaking down the content into sections or sub-sections to make it more organized. This would help readers easily locate information about specific aspects of the research.

2. **Clarity of Citations:** The paper could benefit from clearer citations. Specifically, when referencing previous studies, it would be helpful to include publication years and authors' names along with the references to enhance transparency and credibility.

3. **More In-Text Signposting:** Providing more in-text signposts or transitions between different sections of the literature review would make it easier for readers to follow the logical progression of ideas and arguments.

4. **Integration of Key Concepts:** In certain sections, concepts are introduced without being fully integrated into the broader narrative. For example, the section discussing "Distance to green spaces" introduces the idea but does not fully tie it into the review's central themes. It would be helpful to provide more explicit connections between concepts and the overarching discussion.

5. **Recent Research:** While the review cites various studies, it would be valuable to include some more recent research to ensure that the literature presented is up- to-date and reflective of the latest findings in the field.

Therefore, the literature review serves as a strong foundation for the study, providing a wealth of information on the relationship between green spaces, physical activity, and health. Improvements in organization, clarity of citations, transitions, and integration of key concepts could enhance its effectiveness. Additionally, considering recent research in the field would help ensure the review is current.

## Methods

The methods section of the paper outlines the ethical considerations, data source, main variables, and statistical analyses used in the study. Here are some detailed comments on this section:

**Ethics Approval and Consent:** The paper provides a clear and ethical foundation for the study by explaining that the data used came from a publicly available survey dataset with prior ethical approval from the University of Essex, UK. The use of pseudonyms for confidentiality and the informed consent process are appropriately highlighted. It is also commendable that participants were informed about their right to withdraw from the study without penalty.

**Data Source:** The description of the data source is well-detailed, including the timeframe, data collection method, and the focus of the study. It is important that the source of data is clearly specified, as it enhances the transparency and

reproducibility of the research.

**Main Variables:** The section on main variables effectively describes the key socio- demographic factors and how they were assessed. The recoding of variables for statistical convenience is appropriate and helps streamline the analysis process. However, it would be helpful to briefly explain the rationale behind the recoding to enhance transparency.

**Outcome Variables:** The description of outcome variables, particularly daily visit and visiting and exercise time, is clear and includes how they were assessed. It's crucial to provide a detailed understanding of the measures used in the study.

**Statistical Analyses:** The paper describes the statistical analyses conducted, including chi-square tests, hierarchical regression, logistic regressions, and linear regressions. The approach of considering the moderation effects of neighbourhood diversity and single status is appropriate for the study's research questions. However, it would be beneficial to provide a brief rationale for why these specific statistical methods were chosen, as this can help readers understand the analytical approach better.

**Software Used:** The mention of the software used for statistical analysis (Stata SE17) is important for transparency and reproducibility.

Overall, the methods section provides a thorough and well-structured explanation of how the study was conducted. It effectively covers ethical considerations, data source, variables, and statistical analyses. However, adding some rationale for the chosen statistical methods could further enhance the section.

## Results

The results section of the paper presents findings related to the sample characteristics, relationships between visiting and exercise time, and associations with daily visit. Here are some reviewers' comments:

**Sample Characteristics:** The section effectively provides a clear overview of the sample characteristics, including average age, gender distribution, and nationality. However, the presentation of the modes of travel to green spaces could be more organized. Consider providing this information in a table or a more structured format for improved readability.

**Relationships Between Visiting and Exercise Time:** The description of the relationships between hours visiting local and non-local green spaces and vigorous/non-vigorous exercise time is clear and supported by figures. This visual representation adds to the comprehensibility of the findings.

**Associations with Daily Visit:** The section starts by listing the factors associated with daily visit, which is helpful. However, it might benefit from presenting the key findings in a more structured format or a table. This would make it easier for readers to grasp the significant factors and their level of impact.

**Moderation Effects:** The section mentions that neighbourhood diversity and single status moderated associations with daily visit, which is aligned with the study's hypotheses. However, it would be valuable to provide more details on the nature of these moderation effects. How exactly do neighbourhood diversity and single status influence the associations?

Generally, the results section offers important insights into the study's findings. It would be beneficial to present some of the information, especially associations with daily visit, in a more organized format for better clarity. Additionally, providing a deeper analysis of the moderation effects would enhance the understanding of the results.

## Discussion

The discussion is a comprehensive and well-structured exploration of the study's findings. It effectively interprets the relationships between visiting hours in green spaces and exercise time, highlighting potential physiological and lifestyle factors. The discussion also appropriately contextualizes the findings within the existing literature, emphasizing the importance of socioeconomic factors, distance to green spaces, and the role of neighborhood diversity. Moreover, the discussion makes a valuable connection between the study's results and their practical implications for urban planning and public health initiatives.

**Future Research:** Author(s) should mention any potential avenues for future research based on the findings. Are there specific aspects of the relationships between green spaces, exercise, and well-being that warrant further investigation?

Overall, the discussion is on the right track, but it could benefit from more in-depth analysis and a stronger emphasis on practical and policy implications. Additionally, author(s) make sure the points are well-structured and logically presented.

## Conclusion

Finally, the strengths of this paper include the inclusion of a diverse age range in the population, as well as the incorporation of important moderating factors like single status and neighborhood diversity. These additions may provide valuable insights.

However, there are notable limitations. The study relies on self-reported data, which can introduce potential biases. Causation cannot be inferred due to the cross-sectional design, and the impact of physical work was not thoroughly assessed. The generalizability of the findings is also limited since the study focused on British full-time employees within a specific age range. Additionally, the study's reliance on only four geographical features of green spaces in cross-sectional data restricts the ability to examine longitudinal relationships. Future research could address these limitations for a more comprehensive understanding of the topic.

**Kindly accept the paper subject to these minor changes.**