Review Form 3

Journal Name:	**Advances in Research**
Manuscript Number:	**Ms_AIR_124448**
Title of the Manuscript:	**Characteristics of vibration sources and their propagation properties in shield construction**
Type of the Article	**Opinion Article**

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This study on vibration sources and their propagation during shield construction is significant because it provides valuable insights into mitigating the environmental and structural impacts of underground tunnelling. By analysing the vibration frequency and amplitude characteristics generated by shield machines, the study helps identify how vibrations propagate through different soil types and how they can affect nearby buildings. The findings are particularly important for urban areas undergoing subway expansion, where understanding vibration behaviour is crucial for preventing structural damage and ensuring environmental safety.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	Yes	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	Yes	
Are subsections and structure of the manuscript appropriate?	Yes	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	This manuscript appears scientifically robust and technically sound for several reasons. First, it provides a clear and detailed analysis of vibration sources and their propagation characteristics during shield construction, supported by empirical data and existing literature. The methodologies used, including on-site monitoring and multiple regression analysis, are appropriate for studying complex vibration behaviors in different soil types. Additionally, the manuscript offers practical applications by outlining key findings on how vibrations affect surrounding structures, which can aid in mitigating environmental impacts during tunnel construction projects.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	The author could include more international studies and classical paper	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Some sentences lack clarity	
Optional/General comments	Reviewer #1: This study on vibration sources and their propagation during shield construction is significant because it provides valuable insights into mitigating the environmental and structural impacts of underground tunnelling. By analysing the vibration frequency and amplitude characteristics generated by shield machines, the study helps identify how vibrations propagate through different soil types and how they can affect nearby buildings. The findings are particularly important for urban areas undergoing subway expansion, where understanding vibration behaviour is crucial for preventing structural damage and ensuring environmental safety. The reviewer's comments have been discussed in the subsequent sections: Specific comments: 1. Is the issue of the vibration impact induced by shield construction explicitly stated in the paper? How effectively is this issue integrated into the existing body of research? 2. How effectively does the investigation establish a connection between its findings and practical applications, such as the environmental consequences of shield tunnelling in urban areas? Is it possible to provide more specific or detailed practical recommendations? 3. What is the robustness and appropriateness of the methodology for examining vibration characteristics during shield construction? Have the chosen parameters, such as frequency and amplitude, been accurately measured and adequately justified? 4. Does the paper adequately compare vibrations induced by shield construction with those from alternative construction methods, such as drilling and blasting? 5. (Page 1) In the introduction, geosynthetics such as geogrids or geotextiles can be placed around the shield machine tunnel to absorb and dissipate vibrations. This can reduce the impact of vibration on surrounding structures and mitigate the risk of uneven settlement or damage. Kindly refer and cite the following papers in the introduction sections: Kiran Prakash, Rathod D, Muthukkumaran K (2023) Role of Geogrid reinforcement and its diverse applications in the geotechnical engineering and allied fields : a-state-of-the-art review. Aust J Civ Eng 00:1–19. https://doi.org/10.1080/14488353.2023.2205674 Kiran Prakash, Rathod D, Muthukkumaran K (2023) Role of Geogrid reinforcement and its diverse applications in the geotechnical engineering and allied fields : a-state-of-the-art review. Aust J Civ Eng 00:1–19. https://doi.org/10.1080/14488353.2023.2205674 6. (Page 2) Can the authors clarify the criteria for selecting specific vibration sources like the shield cutter head, propulsion system, and discharge system? 7. (Page 4) Is the regression model sufficiently explained in terms of its validation? Can the authors provide more clarity on how they ensured the reliability of the regression analysis? 8. (Page 5) What is the comparison between the findings on the attenuation of high-frequency vibrations and those of low-frequency vibrations across various geological settings? 9. Authors must include more international studies or recent findings to strengthen their literature base.	

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PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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