

Review of: "Factors Affecting the Safety Management Practices of Road Construction in the Sidama Region Road Administration"

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Potential competing interests: No potential competing interests to declare.

The manuscript evaluates five factors as independent variables: safety training, traffic management, equipment maintenance, personal protective equipment, and communication, to determine their effect on the quality of road construction, which serves as the dependent variable. The multiple linear regression model was fitted using data from 178 samples obtained through questionnaires and interviews.

The manuscript addresses a straightforward topic and is written in a simple manner, but it complies with the framework required for paper submission. However, there are some concerns regarding questions and comments that need to be addressed.

1. According to the standards for reviewing a paper, each manuscript intended for publication must be repeatable. Unfortunately, the boundary conditions and factors are not well selected in this manuscript. In other words, environmental, economic, and social factors have not been considered, which would largely affect the evaluation.
2. The novelty is not clearly explained at the end of the introduction. It would be beneficial to utilize the Weldegebriel (2018) paper as a validation model and conduct simulations using software such as Aimsun to plan various scenarios for a better understanding of road administration. I believe that relying solely on questionnaires and interviews is not sufficient to evaluate safety and road conditions and they should be combined with a simulated model. Please refer to this manuscript for further details: [<https://www.mdpi.com/1660-4601/17/2/435>].
3. The manuscript lacks information about the attributes of the Sidama region. It would be beneficial to include pictures or background information about this area. Additionally, various factors such as surface analysis, design speed, demand and supply, population, etc., directly influence road design and construction and should be considered.
4. The literature review in the manuscript is limited and outdated. Studies that concentrate on numerical methods to optimize the model or utilize optimization methods such as MLR models should be thoroughly explained, including the necessary mathematical details about these models. Additionally, it would be beneficial to incorporate other machine learning methods for comparison with the obtained results. Even combining different models could yield more robust and accurate results.
5. The manuscript lacks detailed information on various aspects of traffic management, such as the 4-step trip, tour-based, and activity-based approaches, as well as mobility behavior, including microscopic, mesoscopic, and macroscopic factors. These parameters play a crucial role in determining the quality of road construction and can

significantly impact trip times. Unfortunately, there is no detailed evaluation of these parameters in the paper.

6. Furthermore, the case study presented in the manuscript does not provide sufficient information about the project being evaluated. It is unclear whether the project is located within the city or in an area outside of built-up areas. This distinction is important because within the city, factors such as traffic lights and signal groups can have a significant impact on road quality.

In conclusion, while this paper adheres to a well-structured framework and meets standard compliance, the content is not satisfactory. It lacks novelty, and the regression model has not been adequately optimized. In 2024, there are more robust methods with advanced techniques focused on optimization modeling. Additionally, there is a lack of information in the traffic and road construction content, making it difficult to evaluate road quality based on the provided information. In my opinion, this paper is not acceptable and does not have the potential for submission.

Best regards,

Arshia Shishehgaran