

# The moderating influence of superstitious traffic beliefs on pedestrians' risk perception and safe walking behaviour in Ghana

Enoch F. Sam<sup>1\*</sup>, Wafa Elias<sup>2</sup>, Prince Kwame Odame<sup>1</sup>, Tor-Olav, Nævestad<sup>3</sup>, James Damsere-Derry<sup>4</sup>, Gift Dumedah<sup>5</sup>

\*Lead presenter: [efam@uew.edu.gh](mailto:efam@uew.edu.gh)

<sup>1</sup>Department of Geography Education, University of Education, Winneba, Ghana

<sup>2</sup>Shamoon College of Engineering, Israel

<sup>3</sup>Institute of Transport Economics, Norway

<sup>4</sup>Building and Road Research Institute (BRRI), Council for Scientific and Industrial Research, Kumasi, Ghana

<sup>5</sup>Department of Geography and Rural Development, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

**Keywords:** Safe walking behaviour, superstitious traffic beliefs, risk perception, moderation analysis.

## Background

Global and local traffic safety reports indicate that pedestrians account for a significant share of road traffic deaths and injuries, especially in cities where vehicle-pedestrian encounters are frequent. Beyond infrastructure and policies, human factors, such as fatalistic traffic beliefs and cultural superstitions, also influence pedestrian safety.

## Aim

Understanding these psychological and cultural factors is essential for creating effective safety campaigns and behavioural interventions. Using a moderation analysis, this study sought to determine whether the link between pedestrians' risk perception and safe walking behaviour varies across different levels of fatalistic traffic beliefs.

## Method

Data from 1,060 respondents in Accra and Kumasi, collected through convenience sampling, showed that risk perception positively affects safe walking behaviour.

## Results

Fatalistic traffic beliefs also positively impact safe walking behaviour. However, the interaction between risk perception and fatalistic traffic beliefs was negative and statistically significant, indicating that fatalistic traffic beliefs diminish the influence of risk perception on safe walking behaviour. Specifically, lower fatalistic traffic beliefs strengthen the connection between risk perception and safe walking behaviour, whereas higher beliefs weaken it, even when risk perception is high.

## **Conclusions**

- These beliefs shape individual responses to perceived threats, determining whether risk information encourages behavioural change or resignation.
- The findings suggest that pedestrian safety efforts might be improved by segmenting audiences based on levels of fatalism or related beliefs.