

# Developing a simplified model for safety management system in African transport companies

Tor-Olav Nævestad<sup>1\*</sup>, Enoch F. Sam<sup>2</sup>, Jenny Blom<sup>1</sup>, Anthony Fiangor<sup>2</sup>, Lars Egner<sup>1</sup>, Rune Elvik<sup>1</sup>

\*lead presenter: ton@toi.no

1 Institute of Transport Economics, Norway

2 University of Education, Ghana

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## Background

About 40% of all fatal road accidents in Europe involve drivers at work. We have no reason to believe that the situation is different in African countries. Additionally, the traffic fatality rate (per population) in Africa is the worst among all world regions and is 3 times as much as in Europe (4 times in comparison to EU-countries). There has been a constant growth in African traffic fatalities and the number is expected to increase by another 68% over the next decade if nothing is done. Measures aimed at safety management in companies with drivers at work have proven to be effective in reducing the risk of accidents. Transport companies have only to a limited extent introduced such measures, probably because of limited economy, time and competence. Based on this, Nævestad et al (2017) has developed a simplified evidence-based safety management strategy for small road transport companies, which is called the Safety Ladder for safety management. This is a simplified version of ISO:39001.

## Aims

In the present study, we seek to adapt the Safety Ladder for safety management to the African context of drivers at work. Our point of departure is an empirical study focusing on bus drivers in Norway and Ghana. The aims of the study are to: 1) Compare the framework conditions for road safety of bus companies' in Norway and Ghana, 2) Compare road safety management and organisational safety culture in Norwegian and Ghanaian bus companies, 3) Adapt the Safety ladder for safety management to African bus companies.

## Methods

The study is based on quantitative survey data involving bus drivers in the two countries (n=285 and 281) and qualitative interview data with bus drivers (n=11 and n=19). Multivariate regression analyses of the survey data are conducted to examine factors influencing organisational safety culture, aggressive driving style and drivers' accident involvement. The two first regression analyses are linear, while the latter is logistic.

## **Results**

Multivariate analyses of the survey data indicate that Safety Ladder practices influence organisational safety culture, which influences aggressive driving style which in turn influence drivers' accident involvement. Our study show, however, that the Ghanaian bus companies have few formal safety measures in place, and that they should start to work with safety commitment, and focusing on management follow up of drivers' driving style and seat belt use.

We discuss, however, whether it is sufficient for the Ghanaian bus companies to focus on organisational safety management, given the framework conditions that are negative to safety. Bus drivers in Ghana experience far more challenging framework conditions for safety than the Norwegian bus drivers. The most important framework condition for bus drivers in Ghana is type of employer (commercial or institutional), which influence whether drivers have bonus wage arrangements (which lead to speeding, driving while tired), and which also influence rest rules, vehicle standard etc. The safety commitment of managers might not be sufficient, if the drivers need to maximize the bonus pay arrangement to earn their living. Thus, we also point to authorities' responsibility to change these framework conditions.

## **Conclusions**

The safety commitment of managers might not be sufficient, if the drivers need to maximize the bonus pay arrangement to earn their living. Thus, authorities should remove these constraining framework conditions (i.e. remove the bonus pay system and implement and enforce rest rules). This probably requires an increase in the wage of commercial bus drivers (perhaps also fares). Questions remains, however, as to how important framework conditions are versus organisational safety management in the African context. Boateng (2021) points out that many African countries have a strong focus on driver error and turns a blind eye to the surrounding framework conditions including but not limited to governmental policies and terms and conditions of labour relations and compensating systems.

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