

Fatalistic beliefs and traffic violation behavior among drivers in Africa and Europe: A six-country comparative study

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Background

Road traffic injuries are a leading cause of death worldwide, and the World Health Organization reports that low- and middle-income countries bear a disproportionate share of the burden despite having fewer vehicles. Alongside engineering and enforcement factors, cultural and psychological beliefs may shape how drivers perceive risk and assume responsibility for their own safety. *Fatalism*, the belief that road crashes are predetermined and governed by God, fate, or spiritual forces, and therefore beyond personal control, has been proposed as one such factor, yet cross-country evidence linking fatalistic beliefs to actual driving behaviour remains limited.

Aim

To quantify fatalistic beliefs among drivers in three African and three European countries, and to test whether stronger fatalistic beliefs are associated with riskier self-reported driving behaviour, accounting for country-level clustering and continental differences.

Method

We analysed survey data from 5,009 drivers in six countries, Ghana, Tanzania, and Zambia (Africa) and the Netherlands, Norway, and Sweden (Europe). Fatalistic beliefs were measured with a multi-item fatalism scale (e.g., crashes as the will of God, punishment for bad deeds, and the protective power of prayer or spiritual intervention) and driving behaviour with items adapted from the Driver Behaviour Questionnaire (DBQ) capturing risky/aberrant behaviours (e.g.,

handheld mobile-phone use, unsafe overtaking, speeding in residential streets). Internal reliability (Cronbach's α) and confirmatory factor analysis (WLSMV estimator) were used to validate reduced scales. We then fitted linear mixed-effects models predicting the driver-behaviour score from the fatalism score, with a random intercept for country, progressively adding continent and a fatalism \times continent interaction; a standardised model expressed the effect in standard-deviation units (analytic $N = 4,846$).

Results

The reduced fatalism and DBQ scales were reliable ($\alpha = 0.87$ and 0.78 , respectively) and the factor structure was supported by CFA. Fatalistic beliefs were markedly stronger among African than European drivers: mean fatalism scores (1–5) were highest in Ghana (3.75), Tanzania (2.98), and Zambia (2.95), and lowest in the Netherlands (1.53), Sweden (1.38), and Norway (1.24). Higher fatalism was strongly and significantly associated with riskier driving behaviour ($b = 0.28$ per scale point, $t = 29.3$; standardised $\beta = 0.44$), and this association persisted after accounting for clustering by country and for continent. European drivers reported somewhat lower overall driver-behaviour scores than African drivers ($b = -0.39$). A small but significant fatalism \times continent interaction ($b = 0.04$, $t = 2.1$) indicated that the positive fatalism–behaviour relationship held on both continents and was marginally steeper in Europe. Country-level random effects confirmed meaningful between-country variation in driving behaviour.

Conclusions

Fatalistic beliefs about road crashes are considerably more prevalent among African than European drivers and are robustly associated with riskier self-reported driving behaviour across both regions. Because fatalism may weaken drivers' sense of personal control and the perceived value of safe behaviour, it represents a potentially modifiable target for road-safety interventions in African and similar settings. The findings indicate priority areas, including:

- (i) road-safety education and communication that reframe crashes as preventable and emphasise driver agency rather than fate;
- (ii) culturally tailored campaigns developed with faith and community leaders that reconcile spiritual beliefs with proactive safe-driving practices;
- (iii) integration of fatalism-aware messaging into driver training, licensing, and enforcement;
- (iv) caution about strong cross-country differences when transferring road-safety programmes between high- and low-/middle-income settings; and
- (v) further research using objective/behavioural outcomes and longitudinal designs to test the causal role of fatalistic beliefs.

These results support the development of context-specific, culturally informed road-safety strategies that address the psychological and belief-based determinants of risky driving in low- and middle-income country settings.