**Safety of Vulnerable Road Users in Developing Countries**

**Supervisor:** Dr. Yue Huang and Prof. Oliver Carsten

**Background**

Motorized vehicles pose a safety hazard to other road users (often referred to as vulnerable road users, VRU) such as pedestrians, cyclists and motorcyclists in both urban as well as in rural environments. A number of factors contribute to overall road safety performance: road geometry, pavement surface condition, traffic management measures, legislation and road user behaviour, to name only a few. Road intersections, where drivers make decisions and different types of traffic interfere, tend to have low capacity and high accident rate. There are ‘passive’ protection of road users such as barriers and helmets, but many road accidents could be avoided and thus ‘active’ measures, such as speed management, road and vehicle design, are considered more effective in reducing the frequency and severity of crashes on the road.

**Aim and Scope**

There are crash databases, such as STATS19 in the UK, where factual information on reported accidents can be obtained. However, an investigation into the causation, historical trend and improvement measures will need local knowledge and support with additional data. Surveys, in person or on-line, provide a common way of obtaining such additional data. A challenge in study of road safety in developing countries is often the access to, and accuracy of, accident data. A comprehensive search including police reports, hospital records and insurance claims may need to be carried out, most likely combined with on-site observations.

Improvement in road safety has tangible benefits to the society, and the safety policy must be aligned with a region’s transport policy, which is linked to a wider context such as energy, housing and public health. The global call for sustainable transport (e.g. use of public transport, walking and cycling) can only be achieved when the safety of vulnerable road users be attained by infrastructure providers, automobile manufacturers, policy makers and the public. Recent advancements in vehicle technology, such as Driver Assistance Systems, pose new and different challenges to curbing the road accidents. Road safety research in the social, economic and technological context of the global south is particularly welcome.

**Suggested Areas of Research**

* Impact of highway geometry and road layout on road safety
* Measures and interventions for the safety and protection of vulnerable road users
* Motorcycle safety in developing countries
* Autonomous vehicles and demand for infrastructure

For further information, please contact Dr. Yue Huang (y.huang1@leeds.ac.uk)

**Reference**

* BARBOSA, H., CUNTO, F., BEZERRA, B., NODARI, C. & JACQUES, M. A. 2014. Safety performance models for urban intersections in Brazil. Accident Analysis & Prevention, 70, 258-266.
* CHANDRAN, A., SOUSA, T. R. V., GUO, Y., BISHAI, D., PECHANSKY, F. & THE VIDA NO TRANSITO EVALUATION, T. 2012. Road Traffic Deaths in Brazil: Rising Trends in Pedestrian and Motorcycle Occupant Deaths. Traffic Injury Prevention, 13, 11-16.
* DAPILAH, F., GUBA, B. Y. & OWUSU-SEKYERE, E. 2017. Motorcyclist characteristics and traffic behaviour in urban Northern Ghana: Implications for road traffic accidents. Journal of Transport & Health, 4, 237-245.
* FERNANDES, F. A. O. & ALVES DE SOUSA, R. J. 2013. Motorcycle helmets—A state of the art review. Accident Analysis & Prevention, 56, 1-21.
* LOUW, T., MARKKULA, G., BOER, E., MADIGAN, R., CARSTEN, O. & MERAT, N. 2017. Coming back into the loop: Drivers’ perceptual-motor performance in critical events after automated driving. Accident Analysis & Prevention, 108, 9-18.
* VASCONCELLOS, E. A. D. 2013. Road safety impacts of the motorcycle in Brazil. International Journal of Injury Control & Safety Promotion, 20, 144-151.