# The University of Queensland - IIT Delhi Academy of Research Joint PhD Project

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| **PROJECT TITLE** | **MOTORIZED TWO-WHEELER SAFETY - A COMPARATIVE RISK STUDY OF THE OCCUPANTS IN INDIAN AND AUSTRALIAN CONTEXT** |
| **PROJECT CODE** | **UQIDAR 00144** |
| **PROJECT DESCRIPTION** | Globally out of the 1.35 million road traffic deaths, more than half of them are amongst the pedestrians, cyclists and motorcyclists. There are more Motorized (Powered) Two Wheelers (MTWs) in Indian cities compared to other modes (10-15%), excluding pedestrian and public transport. Further nearly 34% of total road traffic deaths are attributed to occupants of MTWs annually in India. In spite of their high crash risk, they fulfill the mobility needs of certain segment of commute in urban areas. In contrast, Australia which is one of the sparsely populated developed countries in the world that has nearly one million motorized two and three wheelers. It would be interesting to compare the crash and injury data of MTW for 3 to 4 big cities in Australia with those in Delhi. Also there is a need to examine whether the conditions in which MTWs operate make them more vulnerable. Keeping in view these aspects there is a need to understand: (1) the crash rates and injury patterns in the MTWs across India and Australia (2) the effect of road and traffic environment on the crash risk The project thus aims to : 1. develop a framework for comparing the crash and injury data across different geographical settings (Australia and India) 2. Explore the possibility of using data mining techniques for identifying any underlying relationships among various crash characteristics (occupant, road and traffic related factors) Methodology To achieve these objectives, data would be collected from Delhi and 4 large cities (Sydney, Melbourne, Brisbane and Perth) in Australia on MTW crashes and injury data. To do a systematic comparison, crash and injury data need to be statistically representative samples from each of these settings as discussed. Further, to develop strategies for safety improvement in the traffic environment with growing MTWs. |
| **PROJECT OUTCOMES** | <ul><li>Crash and injury data synthesis and comparison across different geographical settings</li><li>Interdependence and dissimilarities in the crash data and also identification of non-trivial relationships among the critical factors</li><li>Safety improvement strategies in the MTW environment</li></ul> |
| **ADVISORY TEAM** | **Professor Simon Washington** <br> https://researchers.uq.edu.au/researcher/16969 <br> s.washington@uq.edu.au <br> School of Civil Engineering <br> The University of Queensland <br><br> **Professor K Ramachandra Rao** <br> http://web.iitd.ac.in/~rrkalaga <br> rrkalaga@civil.iitd.ac.in <br> Department of Civil Engineering <br> Indian Institute of Technology Delhi |
| **TYPE OF STUDENT** | Applications are open to i/a students who meet eligibility criteria. |
| **DISCIPLINE BACKGROUND OF STUDENT** | Ideally, this project requires students with a background in transportation engineering, statistics, econometrics. |

| IDEAL CANDIDATE | Essential capabilities:<br>• Demonstrated good knowledge in at least one of the following topics: mathematical and statistical/econometric modelling, optimisation and data science related areas<br>• Good academic writing skills.<br><br>Desirable capabilities:<br>• Demonstrated ability of conducting quality research and publishing research findings in international journals.<br>• A reliable team player with excellent communication skills (academic writing in particular)<br>• Self driven<br><br>Expected qualifications (courses, degrees, etc):<br>• A Master degree (Transport Engineering ) or Bachelors in Engineering (Civil, Electrical, Mechanical) with high academic standing or Masters degree in Statistics, Econometrics, or related disciplines. |
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