

An Indian-Australian research partnership

Project Title: **Role of working and prospective memory in the performance of young and old drivers**

Project Number **HSS0499**

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IITB Department:

Humanities and Social Sciences

Research Academy Themes:

Highlight which of the Academy's Theme(s) this project will address?

(Feel free to nominate more than one. For more information, see www.iitbmonash.org)

1. Advanced computational engineering, simulation and manufacture
2. Infrastructure Engineering
3. Clean Energy
4. Water
5. Nanotechnology
6. Biotechnology and Stem Cell Research
7. **Humanities and Social Sciences**

The research problem

With rapid urbanisation and technological advancements every human being is affected directly or indirectly by driving, be it a baby sitting in a car, or individual crossing a road. Normal cognitive abilities affect the process of driving in a critical way. A positive correlation has been found between cognitive functioning and driving performance (Aksan et al., 2012). Working and prospective memory are two important processes since they are associated with unique skills that are required in driving such as remembering things to be performed in future, rehearsal, spatial coding, updating visual and spatial information. Nevertheless, their level of significance is relatively lesser known, which creates a scope of research in this area. Therefore, a better insight is required to understand how they affect individual's driving performance.

Project aims

Define the aims of the project

To study the role of working and prospective memory in the performance of young and old drivers.

Expected outcomes

Highlight the expected outcomes of the project

Medical diagnosis is not reliable enough to predict the driving capability of the driver. The study would aid in designing better tests for cognition based filtering of driving applicants. It would further reduce the chances of accidents. Besides, countermeasures can be designed to improve the performance of individuals who are shown to lag in these particular abilities. This scientific study can also serve as a guiding tool for policy makers and government officials in implementing better laws for driving safety and accident prevention.

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

First class Master's degree in psychology or cognitive neuroscience.

Applicants acquainted with the knowledge of EEG/ERP/ eye-tracker and/or cognitive/ neuropsychology/ ergonomics would be encouraged.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.

Please provide a few key words relating to this project to make it easier for the students to apply.

Driving performance, Working memory & Prospective memory