

How can we measure safety for commuting to and from the campus?

With roughly 20,000 enrolled students, most of whom commute to the university, it is imperative that we do so safely. The aim of our study is to analyse those commuting to The University of Bath to better understand if commuters are doing so safely. In this proposal, we will describe the importance of commuter safety and justify the relevance of our chosen additional data variables. Finally, we will discuss the practicality of collecting the data and demonstrate how we strategically designed a form to collect data efficiently, accurately, and comprehensively.

A study from the American National Highway Safety Administration found that 24% of fatal car accidents occurred during a morning or evening work commute. (Law Office of Chadwick McGrady, 2021.) With a small population living on campus, and most of the students and staff commuting, it is important that these commutes are as safe as can be. Noting the importance of commute safety, we looked into the reasons behind British car accidents. It was found that 38% of accidents occurred by the driver failing to look properly, and 20% of accidents occurred as the driver failed to judge the person's speed or direction. (Statista, 2020) Therefore, our two additional variables selected are vehicle visibility and turn signals.

Increased visibility plays a significant role in safety on the road as brightly coloured vehicles like white and yellow cars are less likely to be involved in accidents. White cars are 12% less likely to be involved in an accident compared to black cars. (City Wide Law Group, 2023). Noting 38% of accidents in 2020 were caused by not looking properly (Statista, 2020) and noting the increased risk of poorly visible commuters, we include this as a variable to understand the safety profile of the commuter.

Using turn signals prevents confusion and avoids sudden manoeuvres that can lead to accidents. They help drivers and pedestrians anticipate traffic flow, reducing the likelihood of rear-end collisions and promoting safer crossing decisions. They are a simple yet effective means to ensure road safety. With the knowledge of 20% of accidents caused by drivers not being able to judge another driver's speed or path (Statista, 2020), we include turn signals as an additional measure.

Practicality of the study:

Due to the nature of the variables in our study, manual data collection with our efficient form is straightforward. We must note that all data collected is anonymised.

To address potential data collection challenges, we focused on the speed of data input as a top priority. To streamline this process, we recorded time in 5-minute intervals, starting with the first vehicle in each interval. Any gaps in time were filled in during post-processing. To simplify recording colours and categories, we used initials for each. We also created a key to distinguish between variables with the same initials. For vehicle counts, it was straightforward except for buses, where we estimated occupancy as a percentage. Lastly, collecting data on turn signals was simple since it's a binary indicator.

We are confident that these strategic techniques will enable us to collect data accurately, efficiently and comprehensively.

References:

City Wide Law Group, 2023. *Car Colour and Crash Risk* [Online] Available from: <https://www.citywidelaw.com/los-angeles-car-accident-attorney/car-color-and-crash-risk/>

Law Office of Chadwick McGrady, 2021. *Higher risk of fatal accidents when commuting to work* [Online] Available from: [Higher risk of fatal accidents when commuting to work](#)

Statista, 2020. *Distribution of contributing factors leading to road accidents in Great Britain in 2020* [Online] Available from: [Factors leading to road accidents in Great Britain | Statista](#).