Research Question

How does traffic data during morning peak hours reveal people's travel mode and preferences?

And how does it reflect people's awareness of environmental protection and sustainability?

Justifications

Traffic data is a significantly useful tool as it provides many valuable insights for optimising traffic management and infrastructure development. Traffic engineers could make more effective decisions on multiple traffic problems with the help of traffic data including the potential programming of traffic lights and signals to reduce congestion and thus optimal transport network. It could also offer us an understanding of congestion levels at the university campus entrance during morning peak hours. Traffic data including traffic volume and types of vehicles in both directions. Corresponding to our dataset, the type of vehicle is recorded for every single passed vehicle as well as the occupancy of these vehicles in both directions.

As our job is to monitor traffic data at the university campus entrance during morning peak hours. Our intuitive idea is to find people's travel patterns during peak hours. We can gain insights into the behaviours of university inhabitants and their transportation preferences, including their preferred modes of transport and vehicle colours. This could be figured out by calculating the percentage of each type of vehicle that by used. We can calculate the percentage of public or private transportation that be used by recording the purpose of the vehicle as our additional data.

For our second research question, we want to investigate people's awareness of environmental protection and sustainability. Environmental sustainability is the responsibility to protect natural resources and ecosystems now and in the future. From this, we can infer the overall ecological footprint of these vehicles and their environmental impact on the university and its surroundings. This aligns with our sustainability objectives and the promotion of eco-friendly transportation options on campus potentially finding ways to reduce the university's carbon footprint. To address this, we will collect vehicle type arriving and leaving, alongside with number of occupiers of vehicles and whether the vehicle is private or public transport. With the additional data, colour, we can address people's awareness of environmental protection as there was a study showed that the colour of vehicles may affect the usage of fuel and thus affect the different levels of pollution.

In conclusion, our research addresses key aspects of campus transportation, including traffic flow, occupancy, sustainability and vehicle factors to optimize management.