

To Stop or Not to Stop

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Overview

1. Acknowledgments
2. Background
3. Aims
4. Methods
5. Study Location
6. Results
7. Limitations
8. Conclusions

Acknowledgements

- Transportation Planning & Design Division, City of London, traffic/stop sign methodology guidance:
 - Mark Ridley, SOT (Senior Operations Technologist)
 - Maged Elmadhoon, M.Eng., P.Eng. (Manager, Transportation Planning)
- General Methodology guidance:
 - Mr. Zuber, London Central Secondary School science teacher
 - Neville Suskin, Assoc. Prof. Medicine, Epi & Biostats, Western U., & my father
- Project assistants

Background

- **36%** of fatal crashes occur at stop sign intersections
- Pedestrian injury is the **third** leading cause of injury-related deaths among children **5 – 14 yrs**
- Pedestrians aged **70 and over** account for over **20%** of total number of injured pedestrians

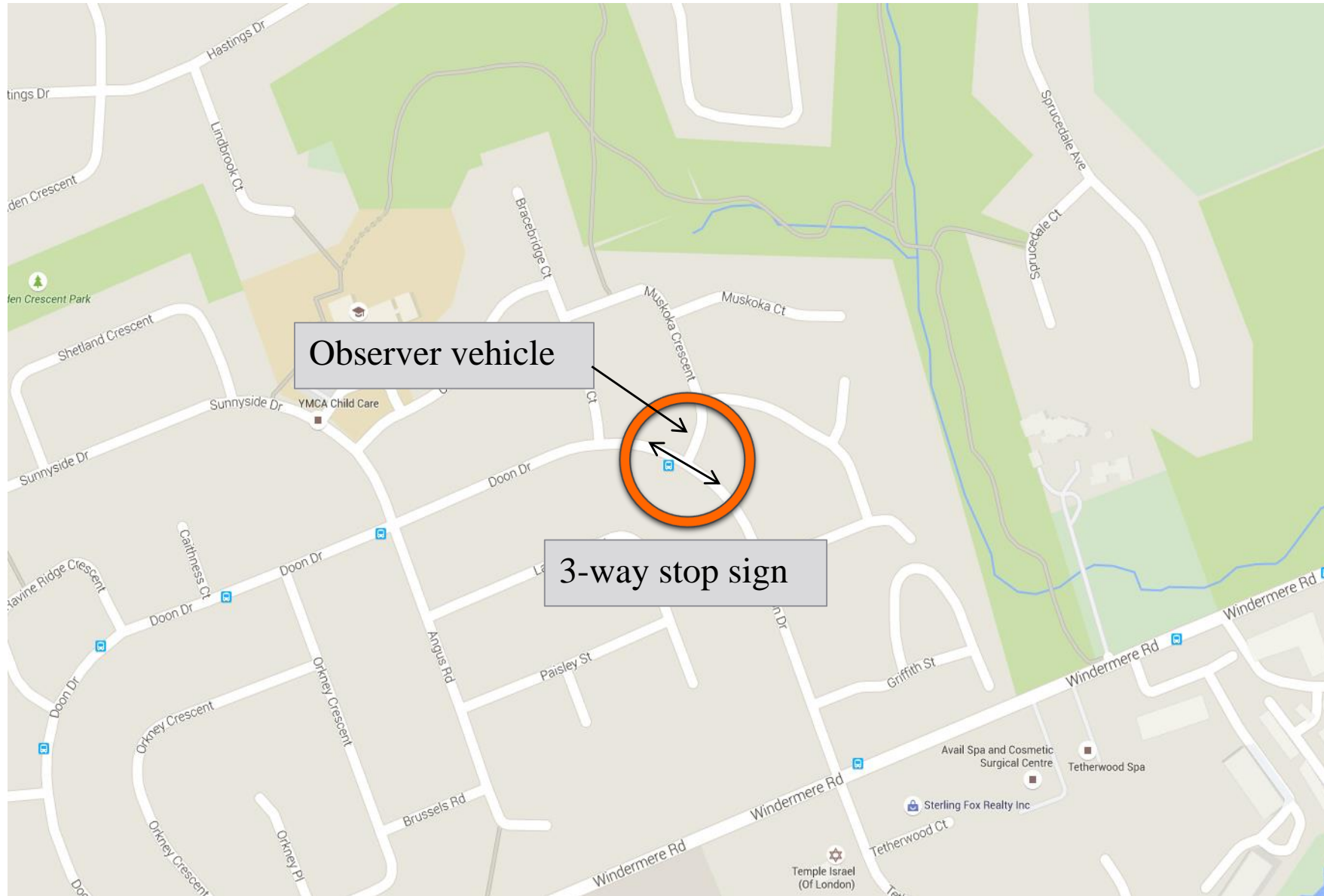
Aims

1. To determine the effect of unwarranted stop signs on drivers' stopping behaviour
2. To determine whether drivers' stopping behaviour could be explored under real life but experimental conditions
3. To determine whether pedestrian presence and specifically pedestrian age affects drivers' stopping behaviour

Methods

1. Non-warranted 3-way stop selected
2. Observer vehicle, with a pedestrian and two observers in it, parked 20 m away from stop street
3. Control, with no pedestrians was conducted, involved three sets of 20 vehicles each, for total of 60
4. Treatments conducted, each involving 3 sets of 15 vehicles, for total of 45 vehicles:
 - Treatment 1: male pedestrian aged 10-17
 - Treatment 2: male pedestrian aged 18-40
 - Treatment 3: male pedestrian aged 41-60
5. Data recorded, analyzed and statistical calculations performed

Study Location



Results

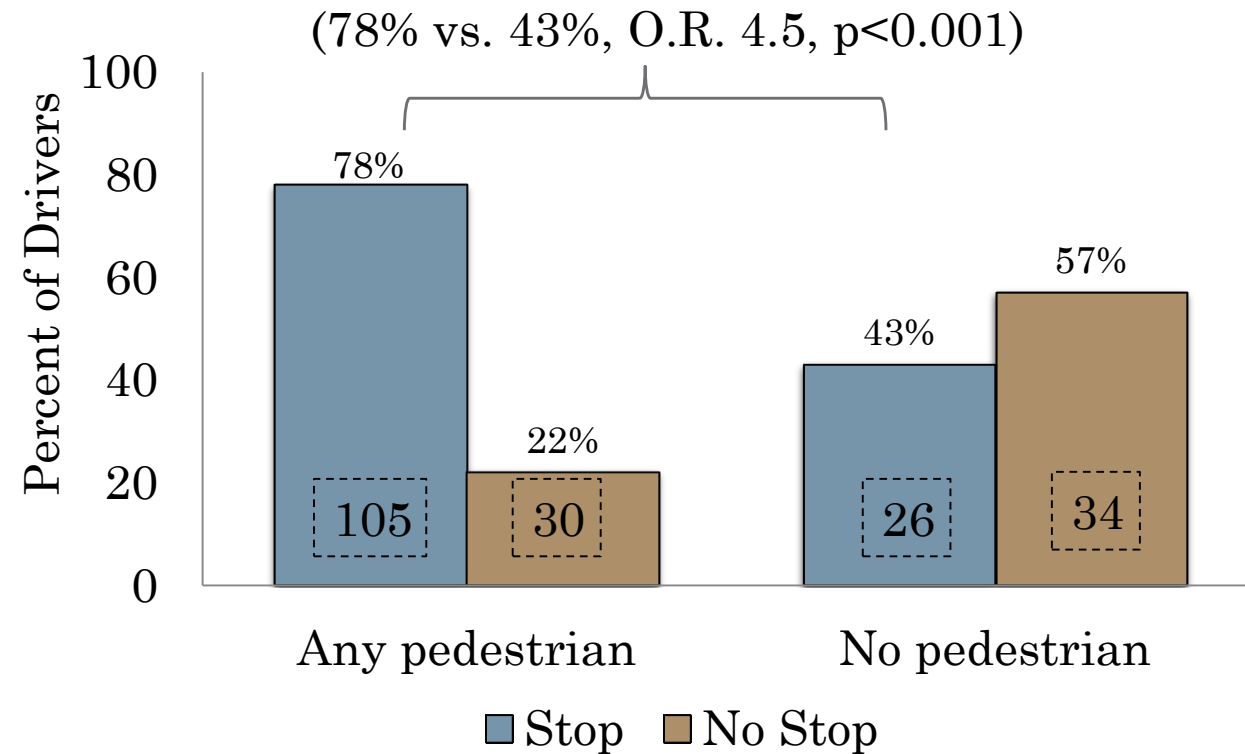


Figure 1: The proportion of drivers who stopped with the presence and without the presence of a pedestrian.

Results

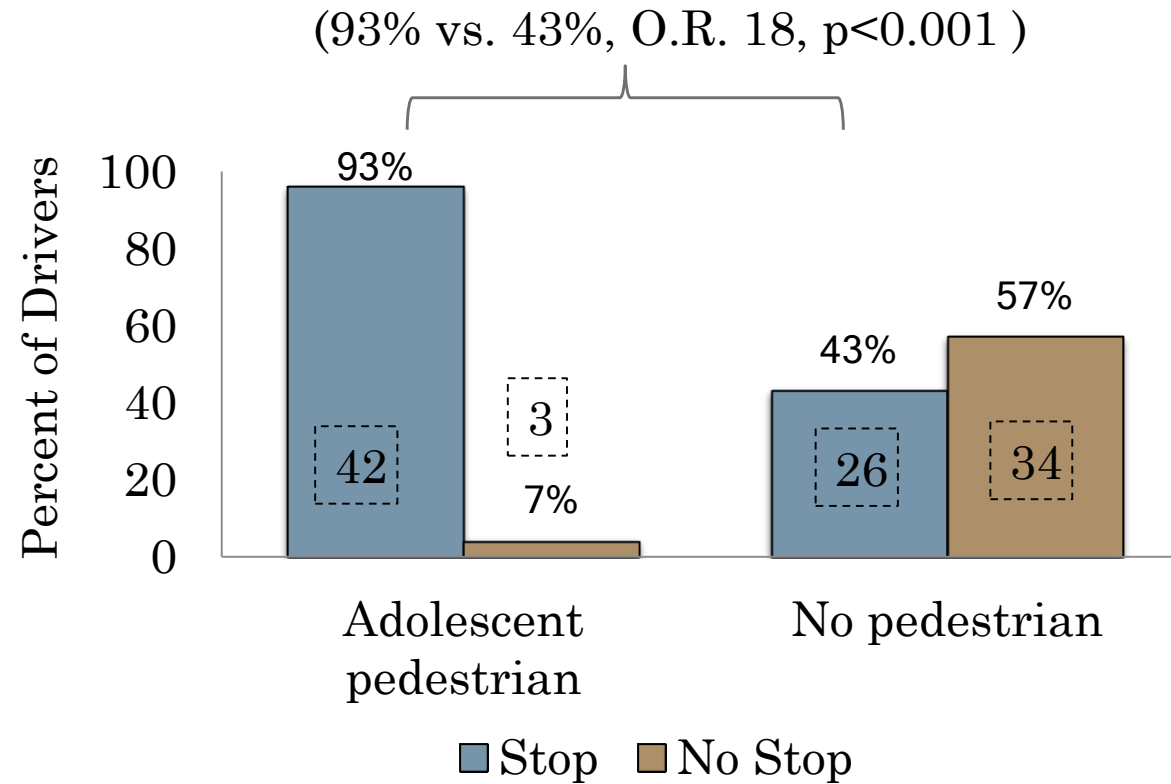


Figure 2: The relationship between the proportion of drivers who stopped with the presence of an adolescent pedestrian and no pedestrian.

Results

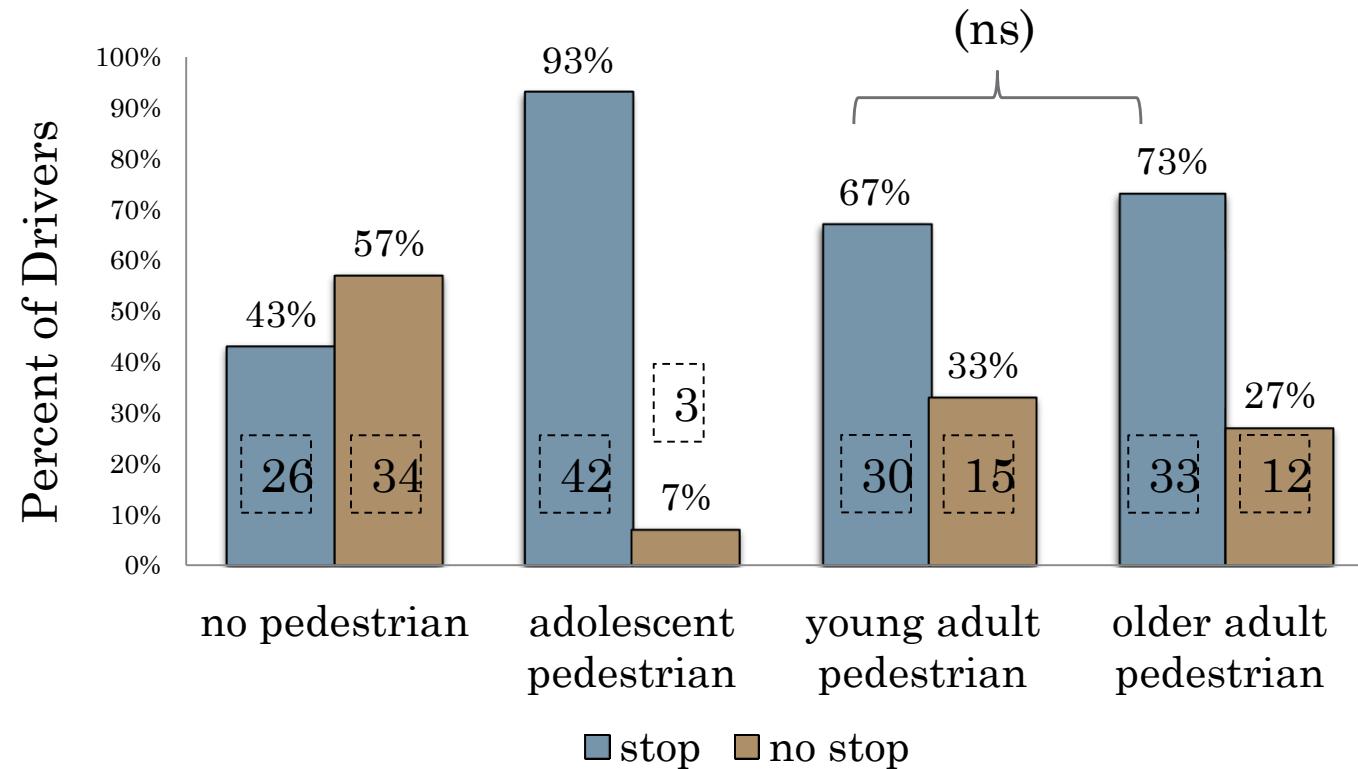


Figure 3: The relationship between the age of the pedestrians and the proportion of drivers who stopped and did not stop for them.

Results

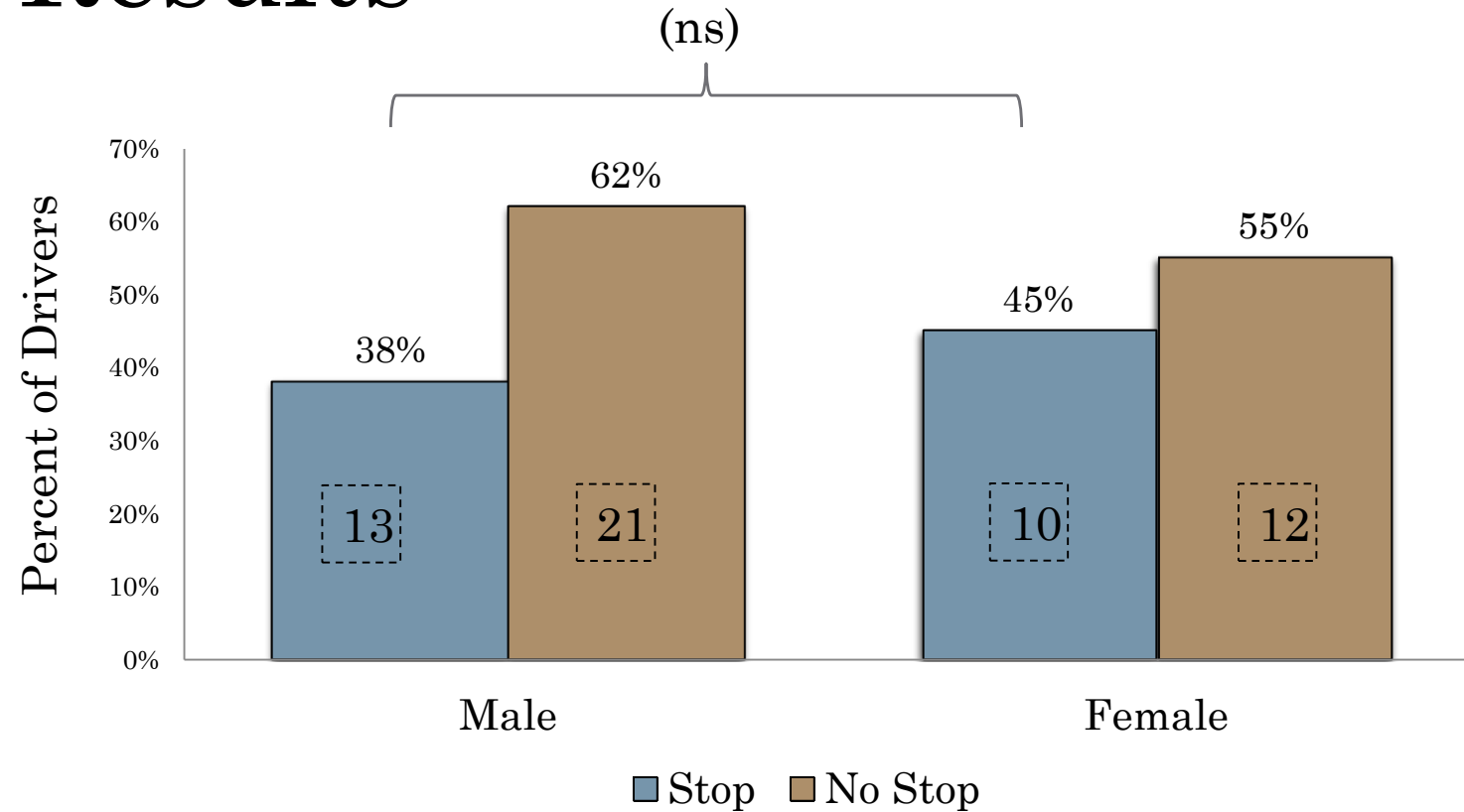


Figure 4: The relationship between drivers' sex and their stopping behavior expressed as a percent. (no pedestrians)

Results

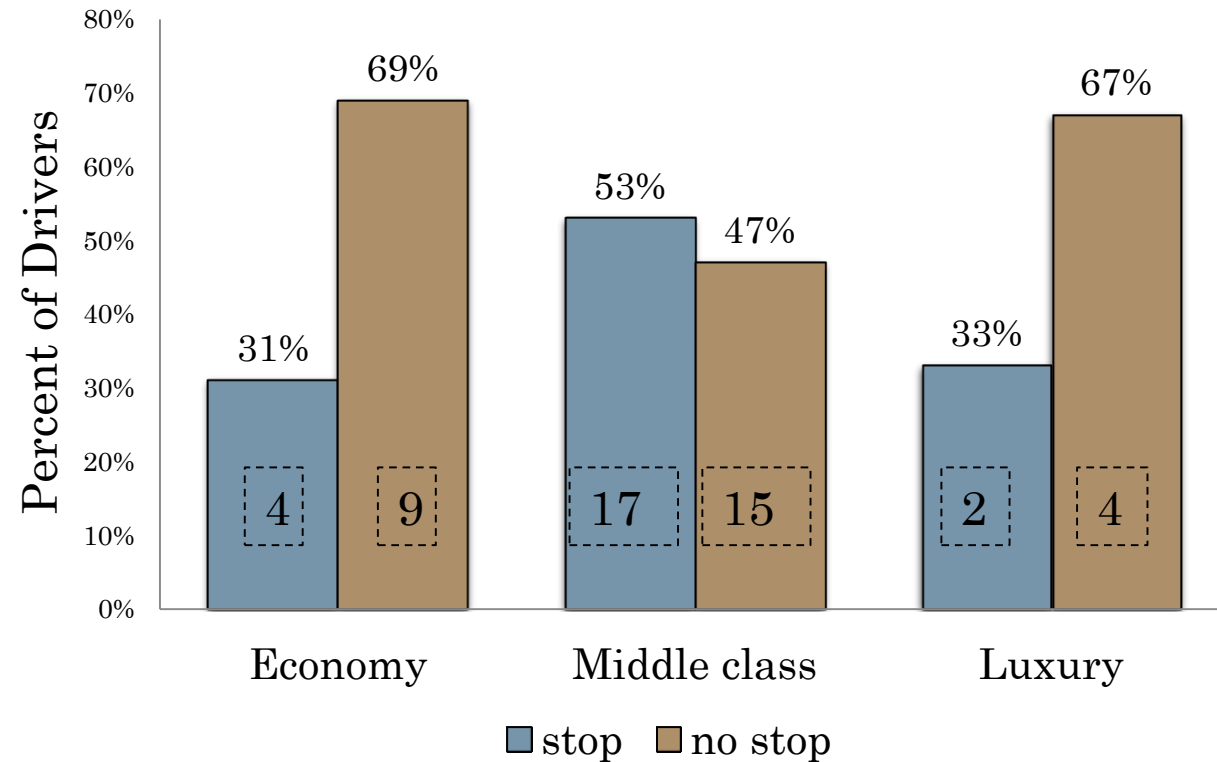


Figure 5: The relationship between the vehicle class and drivers' stopping behaviour. (no pedestrians)

Results

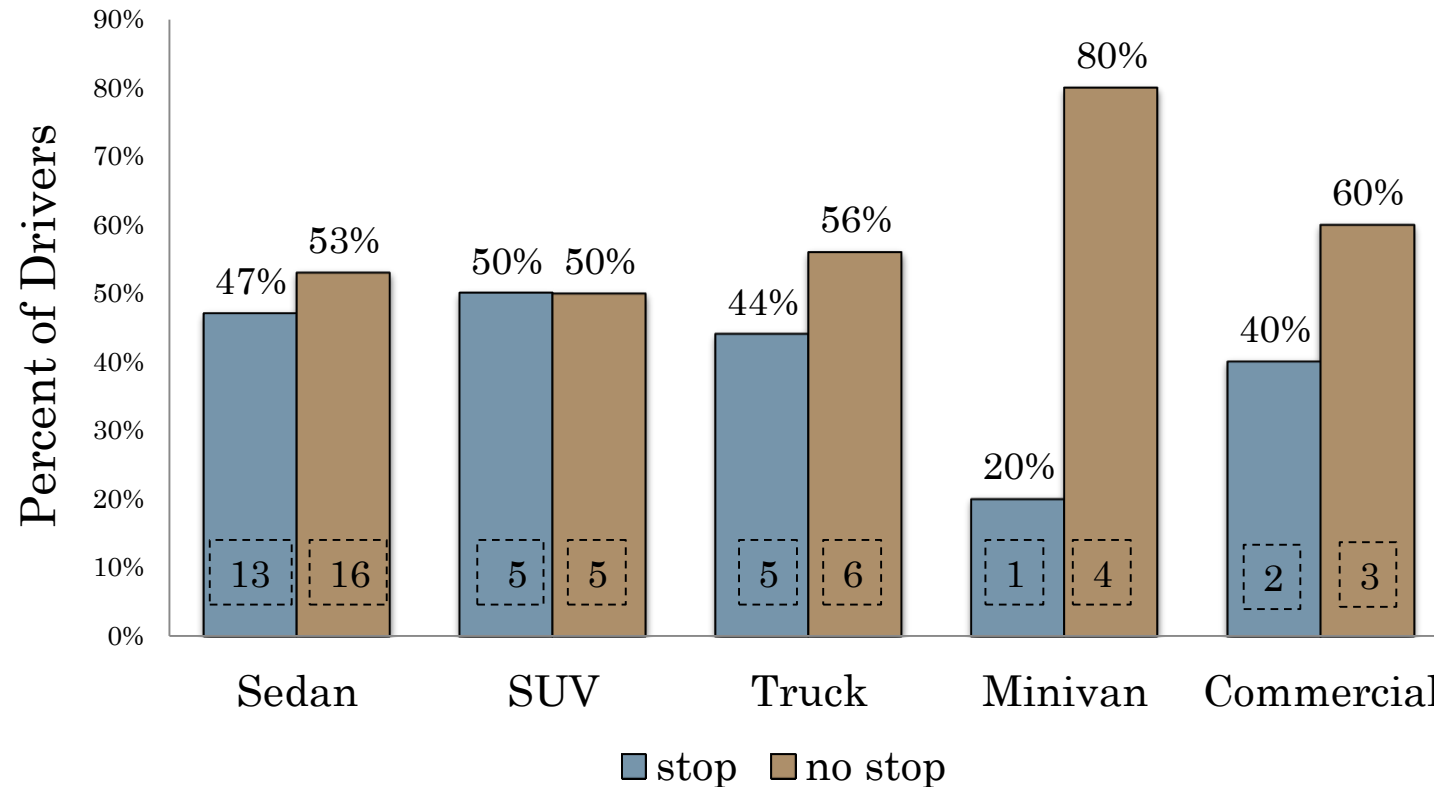


Figure 6: The relationship between the types of vehicles being observed and their drivers' stopping behaviour. (no pedestrians)

Results

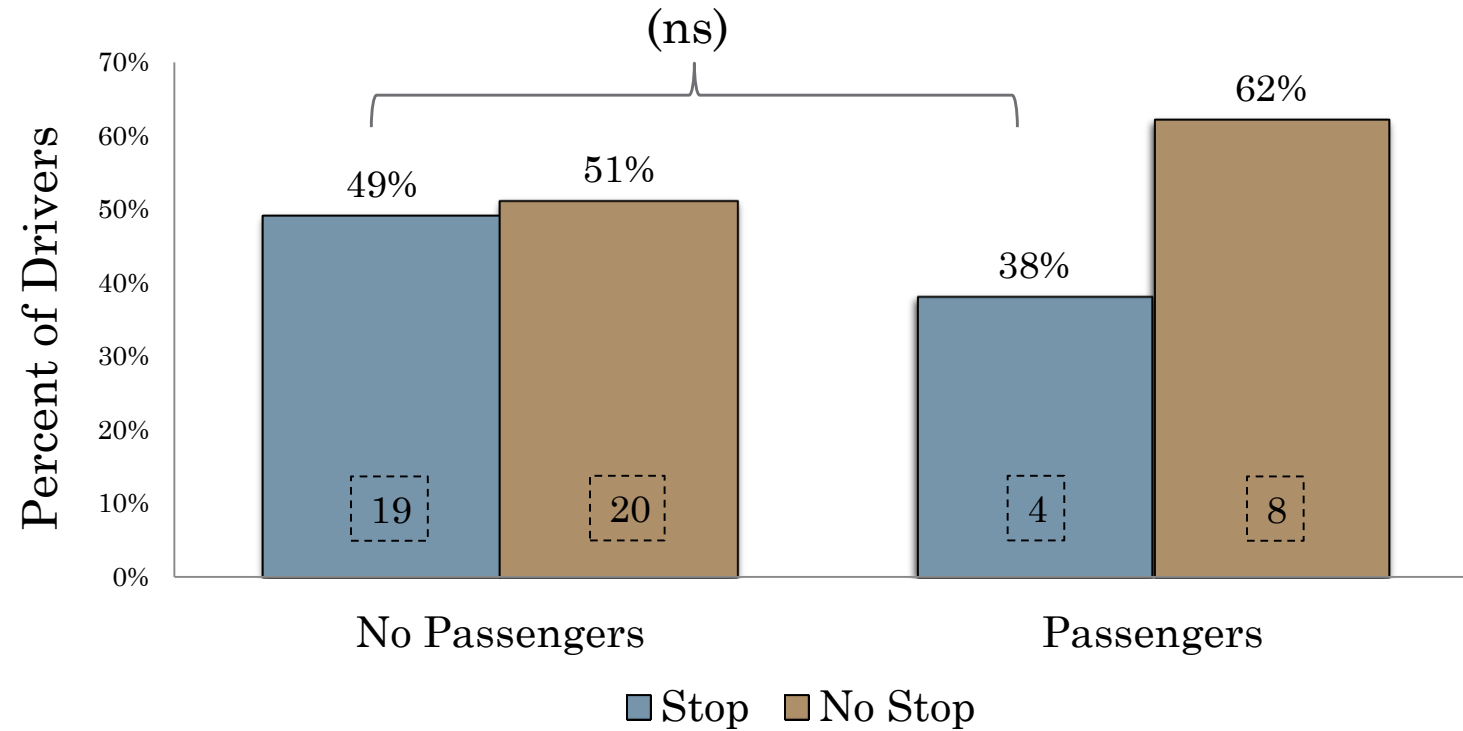


Figure 7: The relationship between the presence of passengers in the vehicles and their drivers' stopping behaviour.

Limitations

- Day of week and time of day was not kept constant when results collected
- Informal measure of valid stop
- Formal sampling techniques not used
- Only two observers

Conclusions

- Results: **43%** stopped without pedestrian, **93%** stopped with adolescent pedestrian, **67%** stopped with young adult pedestrian, and **73%** stopped with older adult pedestrian
- Driver's behaviour not acceptable at non-warranted stop-streets
- Experimental design feasible
- **Relationship discovered: closer pedestrian got to young adult age range, less likely vehicles were to stop for them**

Thank You for Listening!

Questions?