

Analysis of the Accident Dataset

We have the dataset of the road accidents in Great Britain in 2010. There were 32 variables collected. We analyzed if the fatality rates varies by speed and area.

The figure 1 shows the log-odds of fatality for different speed limits & areas. The rural area has higher log-odds of fatality and the log-odds of fatality increase as the speed limit increase. In urban area, the log-odds of fatality increase a lot (-4.88 to -4.01) as the speed limit increase from 30 to 50. However, it almost remain at the level (-4.01 to -3.69) when the speed limit increase to above 60.

The figure 2 shows the probability of survival for different speed limits & areas. The rural area have lower probability of survival and it decrease as the speed limit increase. In urban area, the probability of survival decrease (0.9949 to 0.9884) as the speed limit increase from 30 to 50. However, it almost remain at the level (0.9884 to 0.9887) when the speed limit increase to above 60.

Those two plots convey same information in different ways. Log-odds is better because it has less decimals and it is easier to read.

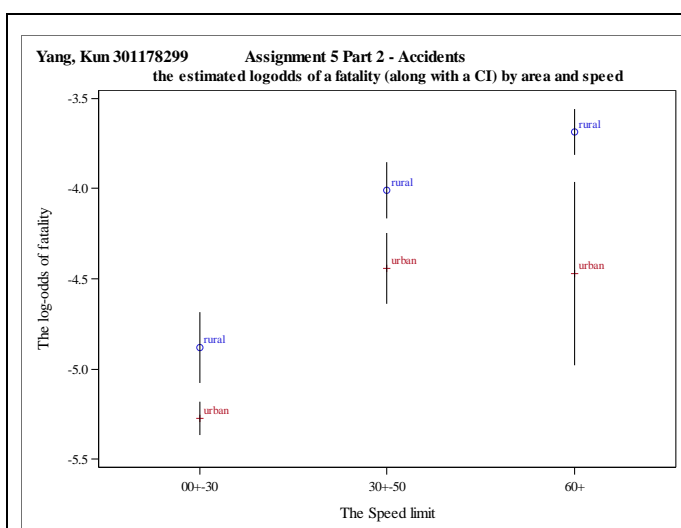


Figure 1: The log-odds of fatality

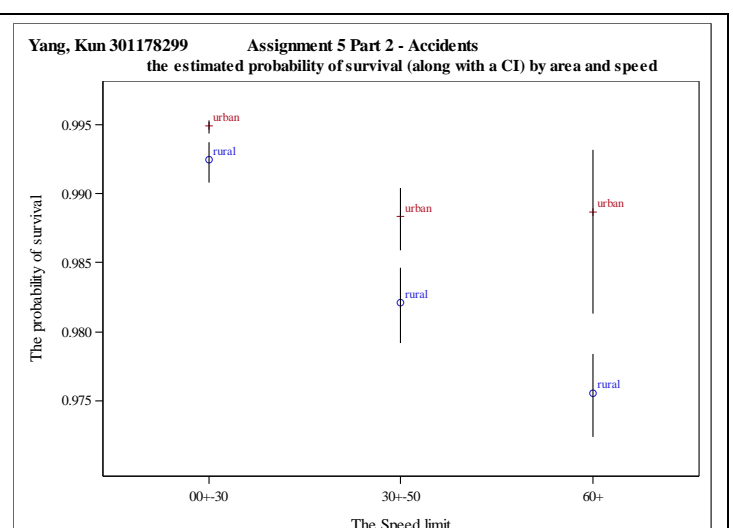


Figure 2: The probability of survival