

Description of Plots 1 and 2

PLOT 1 The plot is showing the relationship between the number of accidents in a day involving personal injury, the proportion of fatalities, the day of the week and a measure of weather severity.

Let's consider first the relationship between the number of accidents and the day of the week. Not surprisingly the distribution of the number of accidents on a Sunday is shifted downwards compared to the Monday to Friday and even Saturday. The distribution of the number of accidents on Friday appears to have a small shift upwards while that on Saturday appears to have a small shift downwards compared to Monday to Thursday. It's quite evident from the plot that the boxes are shifted upwards and downwards.

The proportion of accidents with a fatality in a day is indicated by the size of the dot with larger dots corresponding to a higher proportion of fatalities. Sunday appears to have a smaller number of accidents per day, but the proportion of fatalities in those less accidents tends to be higher than other days. This is seen by the preponderance of large dots on Sunday compared to the other days of the week. Saturday also seems to have higher proportion of fatalities, but not nearly as much as Sundays.

The relationship of number of accidents and proportion of fatalities with weather severity is harder to discern. This is encoded using the colour of the dot, with lighter colours representing more severe weather. We can see a few dots that are light blue (severe weather), but have lower numbers of accidents and intermediate fatality rates (the dots are not that large), and a few light blue dots (indicating very severe weather) with surprising low proportion of fatalities (small size dots). However, it is not clear at all from this graph what the relationship is between weather severity and the other variables. Perhaps, the definition of weather severity was not reasonable.

PLOT 2a The plot is showing the relationship between the proportion of fatalities and the mean weather index. There doesn't appear to be a strong relationship between the mean weather severity index and the proportion of fatalities; indeed, the proportion seems to decline as the mean weather severity increases. With more extreme weather conditions people avoid driving. Other possibility is that the definition of the weather severity index wasn't appropriate.

PLOT 2b In this plot the relationship between the proportion of fatalities and the mean weather index is shown for each day of the week (0 = Sunday). Number of accidents with fatalities seems to be higher during week days. During the weekends, the number decreases but the fatality rate slightly increases. Mondays show the highest fatality rate.