Fuel Economy Data

from 1999 to 2008 for 38 popular models of cars

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Résumé

it's a study made on the fuel economy and the amount consumed over the years between 1999 and 2008 for different car modules and compares them between each other dataset used : mpg

Introduction

This dataset contains a subset of the fuel economy data that the EPA makes. It contains only models which had a new release every year between 1999 and 2008 - this was used as a :

— proxy for the popularity of the car.

— And to study the fuel consummation made by different car types through out the years.

Engine displacement

All cars have made different modules that changed the amount of fuel consumed where the engine displacement was a major factor in this difference that we can see it's effects in fig1 and fig2 [**?**].

Description des données

variables in figure 1 and 2 :

— displ : numeric : engine displacement in liters : 1.6 - 7.0, median :

— hwy : integer ; highway mileage ; miles per gallon

FIGURE 1 – engine displacement in liters (displ) vs highway efficiency (hwy) for different car types .

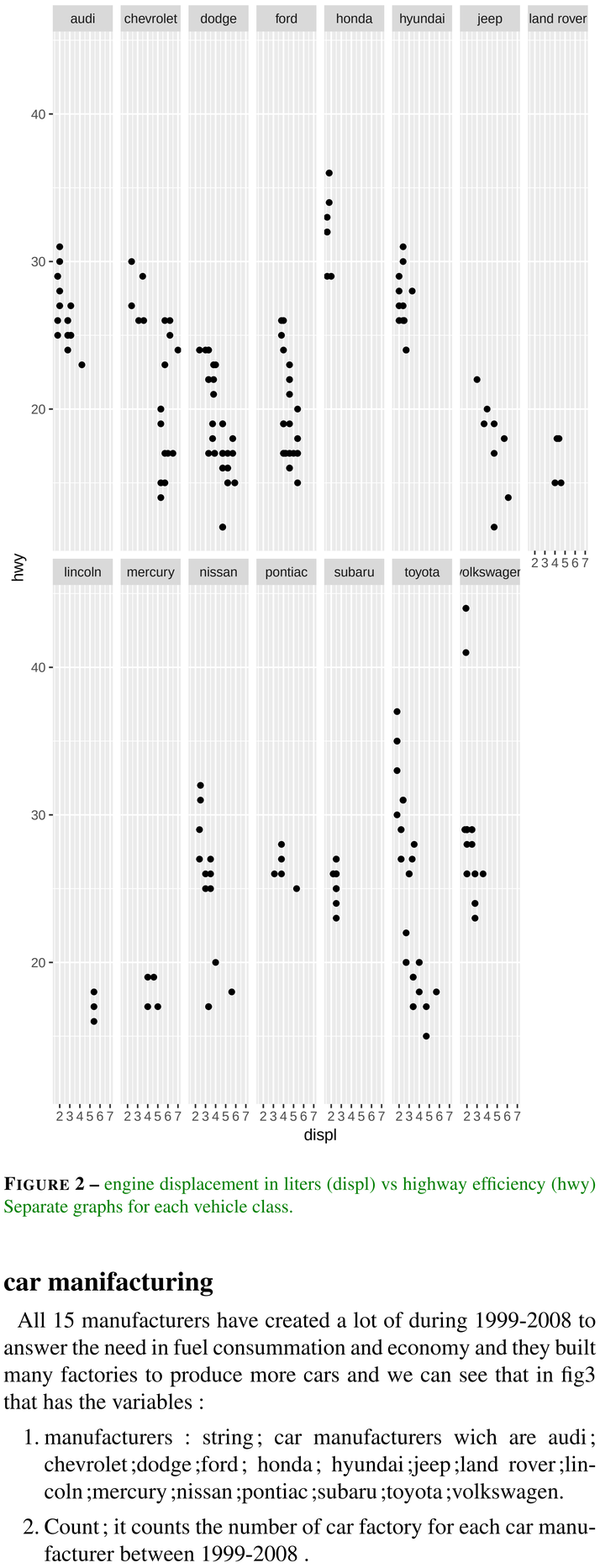

FIGURE 2 – engine displacement in liters (displ) vs highway efficiency (hwy) Separate graphs for each vehicle class.

car manifacturing

All 15 manufacturers have created a lot of during 1999-2008 to answer the need in fuel consummation and economy and they built many factories to produce more cars and we can see that in fig3 that has the variables :

1. manufacturers : string ; car manufacturers wich are audi ; chevrolet ;dodge ;ford ; honda ; hyundai ;jeep ;land rover ;lincoln ;mercury ;nissan ;pontiac ;subaru ;toyota ;volkswagen.
2. Count ; it counts the number of car factory for each car manufacturer between 1999-2008 .

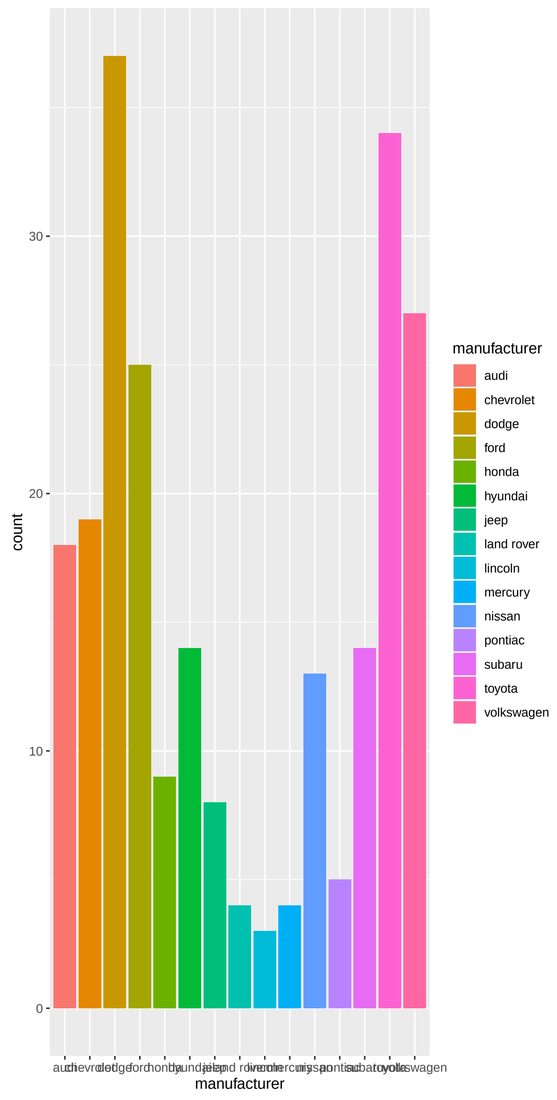

FIGURE 3 – number of factories for each manufacturer between 1999-2008

the code used to create the graphs

```
install.packages("tidyverse")
library(tidyverse)
#  mpg dataset
mpg
# etude stat
summary(mpg)
# plot ( hwy : highway miles per gallon,displ : engine displacement, in litres )
ggplot(data = mpg) +
  geom_point(mapping = aes(x = displ, y = hwy, color = manufacturer))
ggplot(data = mpg) +
  geom_point(mapping = aes(x = displ, y = hwy)) +
  facet_wrap(~manufacturer , nrow = 2)
ggplot(data=mpg) + geom_bar(mapping=aes(x=manufacturer,fill=manufacturer))
```

FIGURE 4 – the r code used to create the graphs

Conclusion

The need to create more cars Eco-friendly which doesn't consume a lot of fuel has became more and more needed since fuel is becoming more rare and a lot more expensive thats why the models that didn't consume a lot of fuel were able to sell more and became more famous for their fuel consumption rate which lead them to build more factories .