Ace Hardware

Case #1: Ace Hardware

Maryclare Leonard

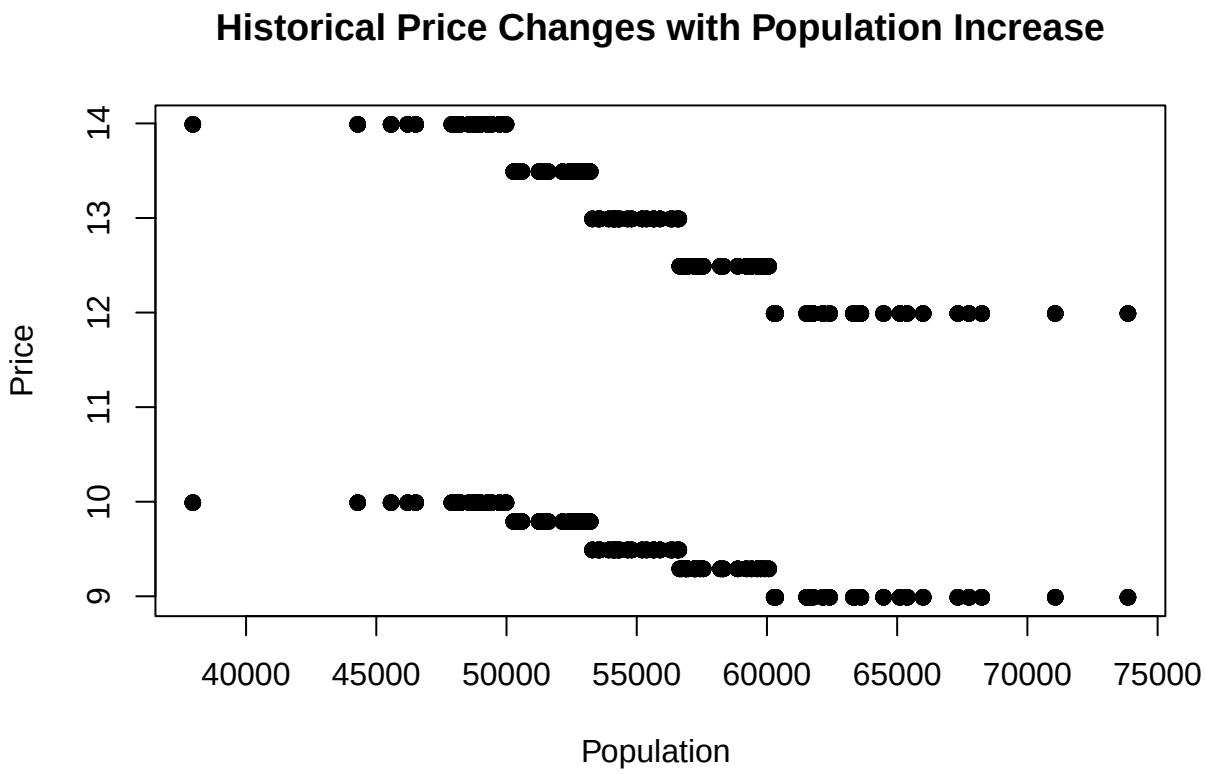
March 22 2022

1 Technical Section

```
# Read in the data
# NOTE: This assumes the current working directory contains these files
df.hist <- read_excel("ace_historical.xlsx")
df.test <- read_excel("ace_testlearn.xlsx")
```

1.1 Data Exploration

```
#plot population to historical price
plot(df.hist$population, df.hist$regprice, main="Historical Price Changes with Populatio
   xlab="Population ", ylab="Price", pch=19)
```



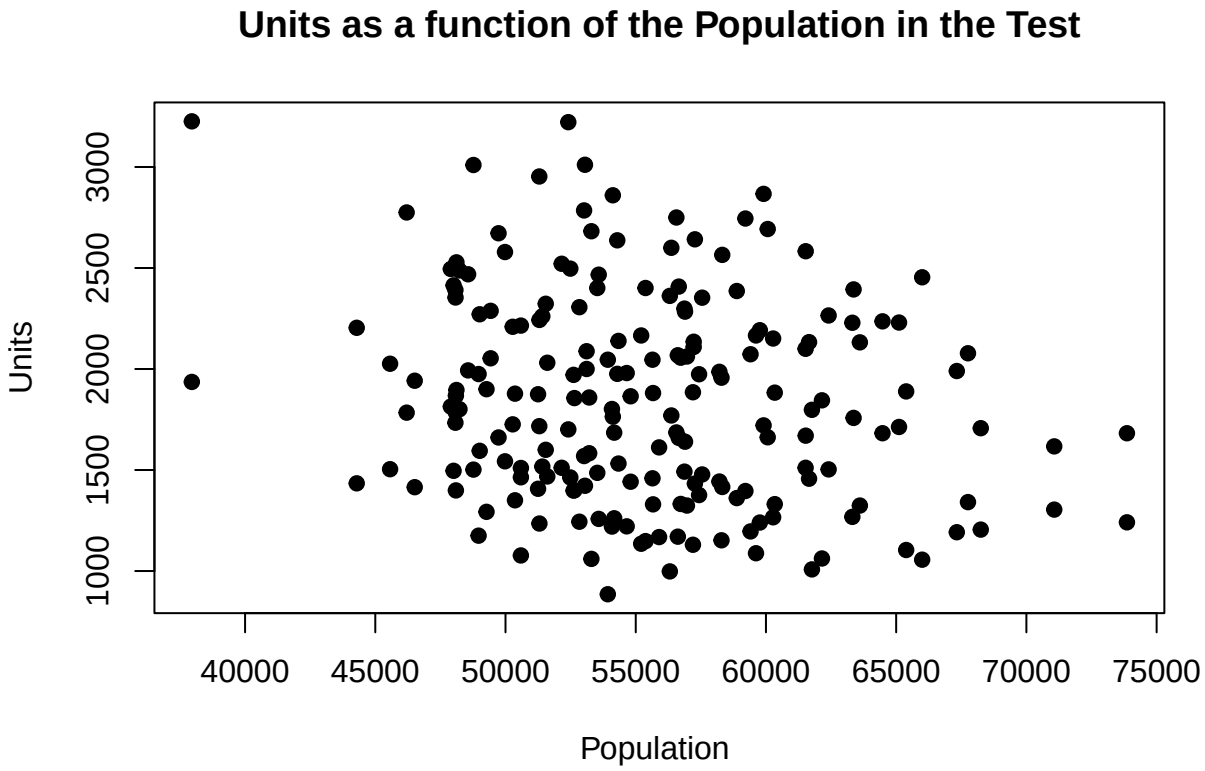

```
#plot population to test price
plot(df.test$population, df.test$regprice, main="Test Price Changes with Population Incr
   xlab="Population ", ylab="Price", pch=19)
```

1.1.1 Part a

Based on the the first of the two previous graphs, historically, price decreased as the population in the area increased.

However, in the tests, which is displayed in the second of the two graphs, price is not related to the population. The price is set independent of the population of the area. Areas with the same population have prices all over the board, from $9 - $10 for the bottom product and from $12 to $14 for the top product.

```
# Part 1 Data Exploration
#plot population to units
plot(df.test$population, df.test$units, main="Units as a function of the Population in t
   xlab="Population ", ylab="Units", pch=19)
```



1.1.2 Part b

Based on the above graph, the units sold reaches its peak at the lowest population level. The maximum at the highest population is almost half of this peak. The maximums at each population size trends down as population increases. Therefore, Ace does not sell more in areas with larger population.

2 Managerial Discussion

Managerial discussion goes here.