Plots Used for STAT 892 Experiment

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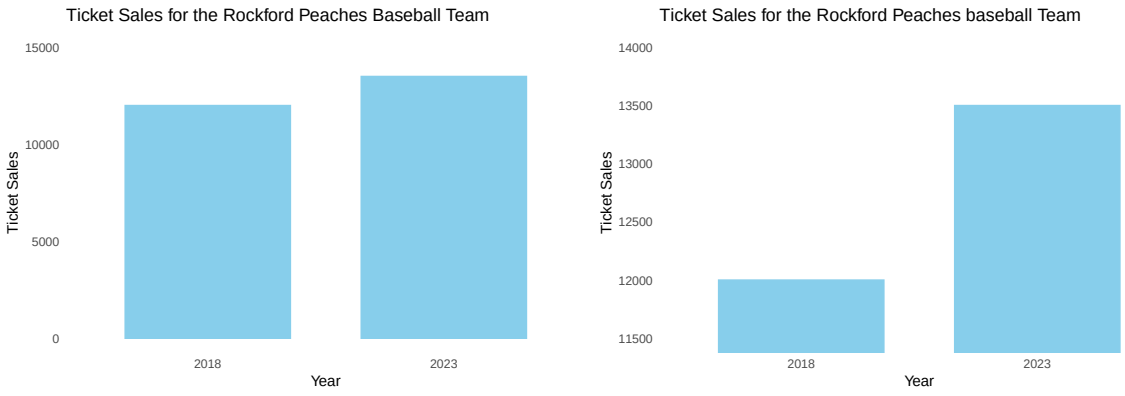
Introduction

This document is contains the plots that will (or could) be used in the experiment for the STAT 892 final paper. For more information on this experiment see the project's GitHub page.

Noncontroversial Plots

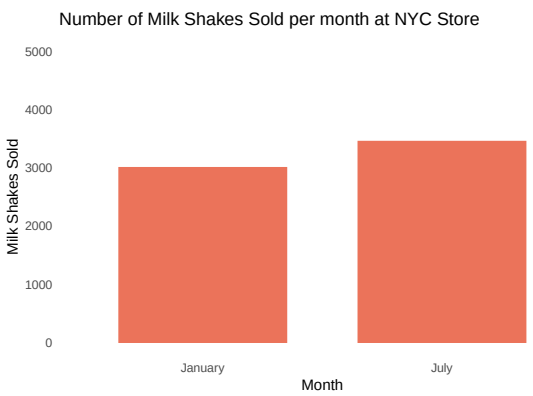
Bar Graphs



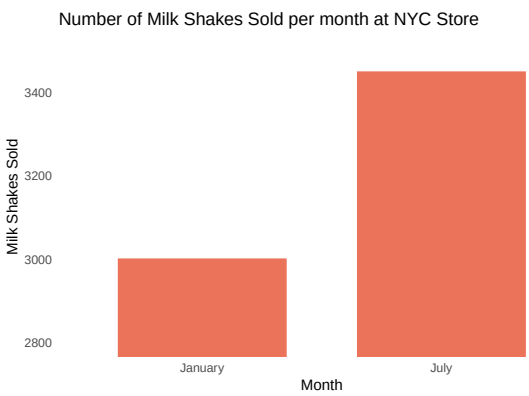
(a) Control

(b) Deceptive

Question: How large was the increase in ticket sales from 2018 to 2023?



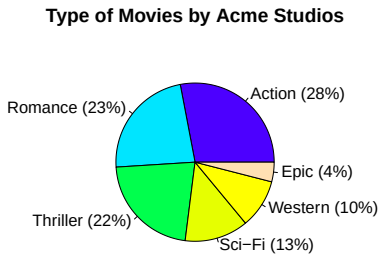
(a) Control



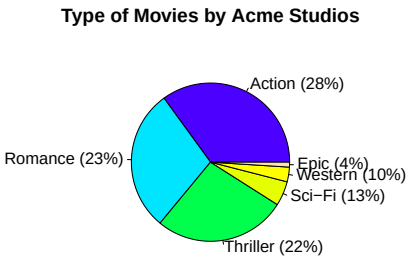
(b) Deceptive

Question: How much did milk shake sales increase from January to July?

Pie Charts

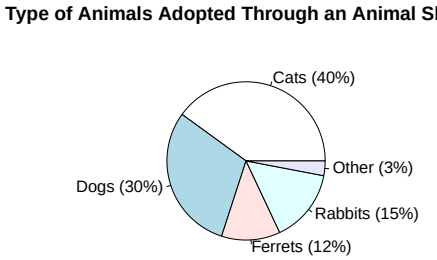


(a) Control

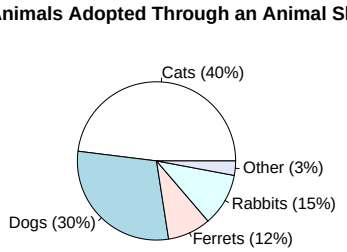


(b) Deceptive

Question: How many more romance movies were made than westerns?



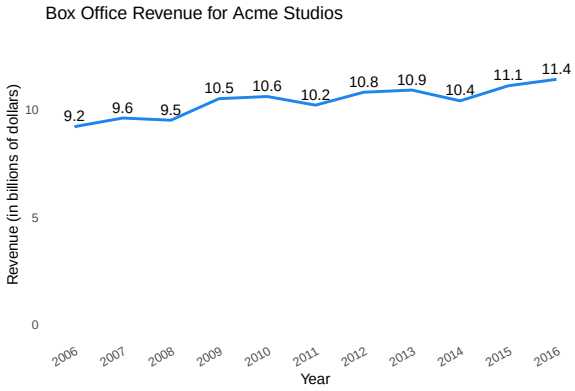
(a) Control



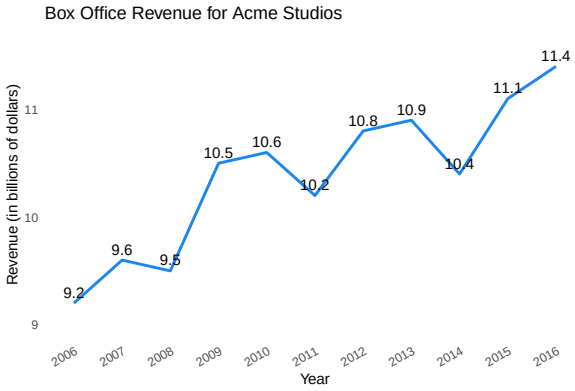
(b) Deceptive

Question: How many more cats were adopted than dogs?

Line Graphs

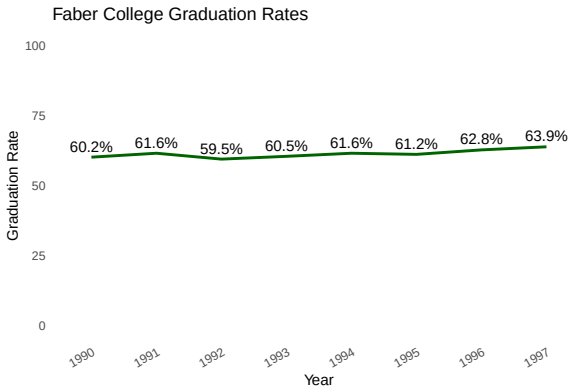


(a) Control

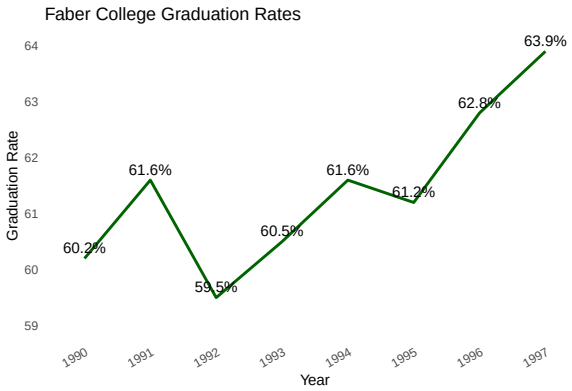


(b) Deceptive

Question:



(a) Control



(b) Deceptive

Question: What was the increase in graduation rates from 1990 to 1997?

Controversial Plots

Bar Graphs

Question:

Lean:

Question:

Lean:

Pie Charts

Question:

Lean:

Question:

Lean:

Line Graphs

Question:

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Question:

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R Code Used

Libraries Used

```
library(ggplot2)
```

Noncontroversial Plots

Bar Graphs

```
RubberDucks <- data.frame(
  Year = c("2018", "2023"),
  Sales = c(12000, 13500)
)

ggplot(RubberDucks, aes(x = Year, y = Sales)) +
  geom_bar(stat = "identity", color = "skyblue", fill = "skyblue", width = 0.7)
+ coord_cartesian(ylim = c(0, 15000)) +
  labs(title = "Ticket Sales for the Rockford Peaches baseball Team",
       x = "Year",
       y = "Ticket Sales") +
  theme_minimal() + theme(panel.grid = element_blank())

ggplot(RubberDucks, aes(x = Year, y = Sales)) +
  geom_bar(stat = "identity", color = "skyblue", fill = "skyblue", width=0.7)
+ coord_cartesian(ylim = c(11500, 14000)) +
  labs(title = "Ticket Sales for the Rockford Peaches baseball Team",
       x = "Year",
       y = "Ticket Sales") +
  theme_minimal() + theme(panel.grid = element_blank())
```

Pie Charts

```r
control_movies <- data.frame(
  Genre = c("Action",
            "Romance",
            "Thriller",
            "Sci-Fi",
            "Western",
            "Epic"),
  Percentage = c(28, 23, 22,
                 13, 10, 4)
)

deceptive_movies <- data.frame(
  Genre = c("Action",
            "Romance",
            "Thriller",
            "Sci-Fi",
            "Western",
            "Epic"),
  Percentage = c(35, 29, 27,
                 5, 3, 1)
)

pie(control_movies$Percentage,
    labels = paste(control_movies$Genre,
                   " (", control_movies$Percentage, "%)", sep = ""),
    main = "Type of Movies by Acme Studios",
    col = topo.colors(nrow(control_movies)))

pie(deceptive_movies$Percentage,
    labels = paste(deceptive_movies$Genre,
                   " (", control_movies$Percentage, "%)", sep = ""),
    main = "Type of Movies by Acme Studios",
    col = topo.colors(nrow(deceptive_movies)))
```

Line Graphs

```r
box_office <- data.frame(
  Year = c("2006", "2007",
           "2008", "2009",
           "2010", "2011",
           "2012", "2013",
           "2014", "2015", "2016"),
  Dollars = c(9.2, 9.6,
              9.5, 10.5,
              10.6, 10.2,
              10.8, 10.9,
              10.4, 11.1,
              11.4)
)

ggplot(box_office, aes(x = Year, y = Dollars, group = 1)) +
  geom_line(color = "dodgerblue2", size = 1) +
  geom_text(aes(label = Dollars),
            vjust = -0.5, size = 4, color = "black") +
  labs(title = "Box Office Revenue for Acme Studios",
       x = "Year",
       y = "Revenue (in billions of dollars)") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 30, hjust = 1)) +
  ylim(0, 13) +
  theme(panel.grid = element_blank())

ggplot(box_office, aes(x = Year, y = Dollars, group = 1)) +
  geom_line(color = "dodgerblue2", size = 1) +
  geom_text(aes(label = Dollars),
            vjust = -0.5, size = 4, color = "black") +
  labs(title = "Box Office Revenue for Acme Studios",
       x = "Year",
       y = "Revenue (in billions of dollars)") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 30, hjust = 1)) +
  ylim(9, 11.6) +
  theme(panel.grid = element_blank())
```

Controversial Plots

Bar Graphs

Pie Charts

Line Graphs