



The bar graph above appears in the original dataset.

A horizontal line representing the average customer satisfaction score was added to serve as a performance benchmark for the 11 stores.

Stores with under-average customer satisfaction scores can consider the following recommendations for improvement, listed on page 2 and 3.

Linear Regression Model for Customer Satisfaction

Intro: Linear regression modeling refers to identifying a set of explanatory variables that has significant association with the outcome variable, in our example, Customer Satisfaction.

```
formula = CustomerSatisfaction ~
      OutOfStockRate +
      EasyPay +
      PartialFillRate +
      OTCSalesIncrease
```

```
Call:
lm(formula = CustomerSatisfaction ~ OutOfStockRate + EasyPay +
    PartialFillRate + OTCSalesIncrease, data = data)

Residuals:
    Min       1Q   Median       3Q      Max
-0.106470 -0.066966 -0.006949  0.072163  0.093331

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)    8.888934   0.330620  26.886 1.75e-07 ***
OutOfStockRate -10.286289   5.405998  -1.903  0.10577
EasyPay         0.002931   0.002116   1.385  0.21541
PartialFillRate 49.416117  11.978973   4.125  0.00618 **
OTCSalesIncrease 2.750693   0.611990   4.495  0.00413 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.09829 on 6 degrees of freedom
Multiple R-squared:  0.9322,    Adjusted R-squared:  0.8869
F-statistic: 20.61 on 4 and 6 DF,  p-value: 0.001186
```

Key Findings

- Medications that are not in stock negatively affected Customer Satisfaction, as denoted by the negative coefficient
- "PartialFillRate" and "OTCSalesIncrease" both had a significant and positive impact on Customer Satisfaction score.
- **Recommendations:** Continually offer partial fill options for patients, if possible. Improve OTC product availability whenever needed most (e.g. order more cough syrups during cold and flu season). Push for Easy Pay enrollment.

Linear Regression Model for Rx Sales

```
formula = RxSales ~
      AverageTemperature +
      RxCount +
      EasyPay +
```

```
Call:
lm(formula = RxSales ~ AverageTemperature + RxCount + EasyPay,
    data = data)

Residuals:
    Min       1Q   Median       3Q      Max
-12657  -3282   1214    2418   13514

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -3.177e+05  1.368e+05  -2.321  0.05328 .
AverageTemperature  6.980e+03  2.875e+03   2.428  0.04557 *
RxCount        4.904e+01  9.912e+00   4.948  0.00166 **
EasyPay        5.065e+02  1.737e+02   2.917  0.02245 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 9495 on 7 degrees of freedom
Multiple R-squared:  0.9134,    Adjusted R-squared:  0.8763
F-statistic: 24.61 on 3 and 7 DF,  p-value: 0.0004299
```

Key Findings

- It is expected that stores with higher prescription counts will have larger Rx sales, which was found to be the case from this linear regression analysis.
- Easy Pay, a payment convenience tool, was the second most significant variable in the model.
- Higher temperatures was associated with greater Rx sales. Warmer and dryer climates, especially in the North Texas area, are known to induce seasonal allergies among its inhabitants.
- **Recommendations:** Continually practice great customer service to retain patients and the Rx count. Push for Easy Pay enrollment. Make available OTC products for seasonal allergies in the late spring and summer months.