

Customer Satisfaction of Airline Survey based on Seat comfort and Inflight wifi service

Using Logistic Regression in R by Brian Estvander

```
# Load the airline data set----  
airline <- read.csv("airline.csv")
```

```
# View the airline data set----  
View(airline)
```

```
# Create new column to divide customer satisfaction between two values: dissatisfied or neutral vs satisfied
```

```
# create new column but fill with 0----  
airline$satisfaction_numeric <- 0  
View(airline)
```

```
# attach numeric value to customer satisfaction  
airline[airline$satisfaction == "neutral or dissatisfied",]$satisfaction_numeric = 0  
airline[airline$satisfaction == "satisfied",]$satisfaction_numeric = 1  
View(airline)
```

```
# Run logistic regression using one variable(seat comfort) as a predictor variable----  
logit_satisfaction <- glm(airline$satisfaction_numeric ~ airline$`Seat.comfort`, family = "binomial")  
summary(logit_satisfaction)
```

```
##  
## Call:  
## glm(formula = airline$satisfaction_numeric ~ airline$Seat.comfort,  
##      family = "binomial")  
##  
## Coefficients:  
##              Estimate Std. Error z value Pr(>|z|)  
## (Intercept)      -2.395997   0.019340  -123.9  <2e-16 ***  
## airline$Seat.comfort  0.603242   0.005049   119.5  <2e-16 ***  
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## (Dispersion parameter for binomial family taken to be 1)  
##  
##      Null deviance: 177814  on 129879  degrees of freedom  
## Residual deviance: 160973  on 129878  degrees of freedom  
## AIC: 160977  
##  
## Number of Fisher Scoring iterations: 4
```

```
# Run logistic regression using two variables as a predictor variables----  
logit_satisfaction <- glm(airline$satisfaction_numeric ~ airline$`Seat.comfort` + airline$`Inflight.wifi.service`, family = "binomial")  
summary(logit_satisfaction)
```

```
##  
## Call:  
## glm(formula = airline$satisfaction_numeric ~ airline$Seat.comfort +  
##      airline$Inflight.wifi.service, family = "binomial")  
##  
## Coefficients:  
##              Estimate Std. Error z value Pr(>|z|)  
## (Intercept)      -3.573214   0.024730  -144.49  <2e-16 ***
```

```

## airline$Seat.comfort      0.591818  0.005218 113.41 <2e-16 ***
## airline$Inflight.wifi.service 0.439931  0.004864  90.44 <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 177814  on 129879  degrees of freedom
## Residual deviance: 152126  on 129877  degrees of freedom
## AIC: 152132
##
## Number of Fisher Scoring iterations: 3

```

Seat comfort has a P-value of e-16 so it is very significant. The beta value of 0.603 indicates that seat comfort is a predictor of customer satisfaction. When you add the additional variable of Inflight wifi service, the P-value remains e-16 so it is very significant and the seat comfort predictor remains 0.6 (0.592). While the in flight wifi service beta value is 0.439 and has prediction, in flight wifi service when compared with seat comfort is less a concern for customer satisfaction.