**Airline Pricing Mini Project**

**Output**

1. summary(airlines.df)

AIRLINE AIRCRAFT FLIGHT\_DURATION MONTH INTERNATIONAL

AirFrance: 74 Min. :0.0000 Min. : 1.250 Min. :0.000 Min. :0.0000

British :175 1st Qu.:0.0000 1st Qu.: 4.250 1st Qu.:1.000 1st Qu.:1.0000

Delta : 46 Median :0.0000 Median : 7.750 Median :2.000 Median :1.0000

Jet : 65 Mean :0.3268 Mean : 7.549 Mean :1.671 Mean :0.9134

Singapore: 40 3rd Qu.:1.0000 3rd Qu.:10.500 3rd Qu.:3.000 3rd Qu.:1.0000

Virgin : 62 Max. :1.0000 Max. :14.660 Max. :3.000 Max. :1.0000

SEATS\_ECONOMY SEATS\_PREMIUM PITCH\_ECONOMY PITCH\_PREMIUM WIDTH\_ECONOMY

Min. : 17.0 Min. : 8.00 Min. :30.00 Min. :34.00 Min. :17.00

1st Qu.:127.0 1st Qu.:21.00 1st Qu.:31.00 1st Qu.:38.00 1st Qu.:17.00

Median :185.0 Median :36.00 Median :31.00 Median :38.00 Median :18.00

Mean :200.7 Mean :33.54 Mean :31.21 Mean :37.92 Mean :17.83

3rd Qu.:243.0 3rd Qu.:40.00 3rd Qu.:32.00 3rd Qu.:38.00 3rd Qu.:18.00

Max. :389.0 Max. :66.00 Max. :33.00 Max. :40.00 Max. :19.00

WIDTH\_PREMIUM PRICE\_ECONOMY PRICE\_PREMIUM PRICE\_RELATIVE N

Min. :17.00 Min. : 65.0 Min. : 86 Min. :0.0200 Min. : 38.0

1st Qu.:19.00 1st Qu.: 404.8 1st Qu.: 524 1st Qu.:0.1000 1st Qu.:162.0

Median :19.00 Median :1224.0 Median :1710 Median :0.3800 Median :227.0

Mean :19.48 Mean :1317.1 Mean :1832 Mean :0.4926 Mean :234.2

3rd Qu.:21.00 3rd Qu.:1903.0 3rd Qu.:2989 3rd Qu.:0.7475 3rd Qu.:279.0

Max. :21.00 Max. :3593.0 Max. :7414 Max. :1.8900 Max. :441.0

LAMBDA QUALITY

Min. :0.0500 Min. : 2.000

1st Qu.:0.1200 1st Qu.: 6.000

Median :0.1300 Median : 7.000

Mean :0.1503 Mean : 6.716

3rd Qu.:0.1500 3rd Qu.: 7.000

Max. :0.5500 Max. :10.000

2. library(psych)

> library(car)

>

> Airline=as.numeric(airlines.df$AIRLINE)

> Seats\_eco=as.numeric(airlines.df$SEATS\_ECONOMY)

> Seats\_pre=as.numeric(airlines.df$SEATS\_PREMIUM)

> Pitch\_eco=as.numeric(airlines.df$PITCH\_ECONOMY)

> Pitch\_pre=as.numeric(airlines.df$PITCH\_PREMIUM)

> Width\_eco=as.numeric(airlines.df$WIDTH\_ECONOMY)

> Width\_pre=as.numeric(airlines.df$WIDTH\_PREMIUM)

> Price\_rel=as.numeric(airlines.df$PRICE\_RELATIVE)

> Price\_pre=as.numeric(airlines.df$PRICE\_PREMIUM)

> Price\_eco=as.numeric(airlines.df$PRICE\_ECONOMY)

3. boxplot(Airline~Seats\_eco,data=airlines.df, main="Airline Vs Seats Economy",

xlab="Seats In Economy", ylab="Airline")

boxplot(Airline~Seats\_pre,data=airlines.df, main="Airline Vs Seats Premium",

xlab="Seats In Premium", ylab="Airline")

boxplot(Airline~Pitch\_eco,data=airlines.df, main="Airline Vs Pitch Economy",

xlab="Pitch in Economy", ylab="Airline")

boxplot(Airline~Pitch\_pre,data=airlines.df, main="Airline Vs Pitch Premium",

xlab="Pitch in Premium", ylab="Airline")

boxplot(Airline~Price\_rel,data=airlines.df, main="Airline Vs Price Relative",

xlab="Price Relative", ylab="Airline")

boxplot(Airline~Price\_pre,data=airlines.df, main="Airline Vs Price Premium",

xlab="Price Premium", ylab="Airline")

boxplot(Airline~Price\_eco,data=airlines.df, main="Airline Vs Price Economy",

xlab="Price Economy", ylab="Airline")

boxplot(Airline~Width\_pre,data=airlines.df, main="Airline Vs Width Premium",

xlab="Width Premium", ylab="Airline")

boxplot(Airline~Width\_eco,data=airlines.df, main="Airline Vs Width Economy",

**All BOX PLOT AND CORRGRAM ADDED IN FOLDER.**

xlab="Width Economy", ylab="Airline")

4. library(UsingR)

t.test(Seats\_pre - Seats\_eco)

One Sample t-test

data: Seats\_pre - Seats\_eco

t = -51.03, df = 461, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

-173.6064 -160.7313

sample estimates:

mean of x

-167.1688

5. t.test(Pitch\_pre - Pitch\_eco)

One Sample t-test

data: Pitch\_pre - Pitch\_eco

t = 81.07, df = 461, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

6.553644 6.879256

sample estimates:

mean of x

6.71645

6. t.test(Width\_pre - Width\_eco)

One Sample t-test

data: Width\_pre - Width\_eco

t = 29.515, df = 461, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

1.543577 1.763782

sample estimates:

mean of x

1.65368

7. t.test(Price\_pre - Price\_eco)

One Sample t-test

data: Price\_pre - Price\_eco

t = 19.022, df = 461, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

462.0499 568.5128

sample estimates:

mean of x

515.2814

8. t.test(Price\_rel)

One Sample t-test

data: Price\_rel

t = 23.371, df = 461, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 0

95 percent confidence interval:

0.4512174 0.5340640

sample estimates:

mean of x

0.4926407

9. fitPremium <- lm(Price\_pre~Airline+Seats\_pre+Pitch\_pre+Width\_pre+Price\_rel)

> coef(fitPremium)

(Intercept) Airline Seats\_pre Pitch\_pre Width\_pre Price\_rel

4800.74020 -758.66262 21.18664 -798.95058 1474.58400 360.71504

10. fitEconomy <- lm(Price\_eco~Airline+Seats\_eco+Pitch\_eco+Width\_eco+Price\_rel)

> coef(fitEconomy)

(Intercept) Airline Seats\_eco Pitch\_eco Width\_eco Price\_rel

-10997.024652 -153.260771 1.196935 393.844468 18.626343 -176.303186