Univariable analysis for products from the website if they were exclusive or sold online only (MarketingFlags)

```{r}
# Encoding MarketingFlags as factor

sephora$MarketingFlags = as.factor(sephora$MarketingFlags)



# Univariable model

model.MarketingFlags <- glm(online_only ~ MarketingFlags, family = binomial,
data = sephora)



# Statistic summary sum_model.MarketingFlags <- summary(model.MarketingFlags)
sum_model.MarketingFlags

```

```
Call:
glm(formula = online_only ~ MarketingFlags, family = binomial,
    data = sephora)

Coefficients:
                  Estimate Std. Error z value Pr(>|z|)
(Intercept)         -19.57     156.68  -0.125    0.901
MarketingFlagsTRUE   19.54     156.68   0.125    0.901

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 9791  on 8986  degrees of freedom
Residual deviance: 5927  on 8985  degrees of freedom
AIC: 5931

Number of Fisher Scoring iterations: 18
```

Wald test for products from the website if they were exclusive or sold online only

```{r}
# Wald test

wald_MarketingFlags <- round(sum_model.MarketingFlags$coefficients[2]/
```

```
sum_model.MarketingFlags$coefficients[2,2],3)


pvalue_MarketingFlags <- round(2*(1-pnorm(wald_MarketingFlags)),4)

```

$$H_0 : \beta_1 = 0$$

$$W = \frac{\hat{\beta}_1}{\hat{SE}(\hat{\beta}_1)} = 0.125$$

$$P\_value = 0.9005$$

According to the Wald test, the independent variable "MarketingFlags" is not statistically significant because its p-values is more than the significant level α=0.25