

Univariable analysis for limited edition offer

```
```{r}
```

```
Encoding limited edition offer marketing as factor sephora$limited_time_offer
= as.factor(sephora$limited_time_offer)
```

```
Univariable model
```

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

```
Statistic summary
```

```
sum_model.limited_time_offer <- summary(model.limited_time_offer)
sum_model.limited_time_offer
```

```
...
```

Call:

```
glm(formula = online_only ~ limited_time_offer, family = binomial,
 data = sephora)
```

Coefficients:

	Estimate	Std. Error	z value	Pr(> z )
(Intercept)	-1.1823	0.0249	-47.489	<2e-16 ***
limited_time_offer1	-10.3838	113.7194	-0.091	0.927

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Null deviance: 9791.0 on 8986 degrees of freedom  
Residual deviance: 9789.4 on 8985 degrees of freedom  
AIC: 9793.4

Number of Fisher Scoring iterations: 10

## Wald test for limited edition offer

```
```{r}
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```
# Wald test wald_limited_time_offer <-
round(sum_model.limited_time_offer$coefficients[2]/sum_model.limited_time_offer$
coefficients[2,2],3)
```

```
pvalue_limited_time_offer <- round(2*(pnorm(wald_limited_time_offer)),4)
```

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...
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$$H_0 : \beta_1 = 0$$

$$W = \frac{\hat{\beta}_1}{\hat{SE}(\hat{\beta}_1)} = -0.091$$

$$P_value = 0.9275$$

According to the Wald test, the independent variable “limited_time_offer” is not statistically significant because its p-values is more than the significant level $\alpha=0.25$