**Luggage Set**

Call:

lm(formula = net\_Sales ~ ., data = kol.PE\_Luggage\_Set)

Residuals:

Min 1Q Median 3Q Max

-0.731 -0.400 -0.178 0.360 2.038

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.33929 0.07003 4.84 1.5e-06 \*\*\*

kohl\_Regular\_price -0.04802 0.00796 -6.03 2.4e-09 \*\*\*

kohl\_disc\_perc -0.12089 0.13270 -0.91 0.36254

Target\_markdown\_price -0.03553 0.01539 -2.31 0.02119 \*

Price\_rat\_amazon\_final\_pr 0.01295 0.05268 0.25 0.80590

TCIN\_var 0.10975 0.02277 4.82 1.7e-06 \*\*\*

Amz\_Avg\_negative\_sent\_score -0.49148 0.13991 -3.51 0.00047 \*\*\*

reviews\_3\_M -0.00357 0.00144 -2.47 0.01363 \*

Avg\_wt\_score 0.03807 0.12799 0.30 0.76622

kohls\_Number\_of\_images 0.01426 0.01107 1.29 0.19824

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

Residual standard error: 0.508 on 868 degrees of freedom

Multiple R-squared: 0.109, Adjusted R-squared: 0.0996

F-statistic: 11.8 on 9 and 868 DF, p-value: <2e-16

|  |  |  |
| --- | --- | --- |
|  | **Luggage Set** |  |
|  |  |  |
| **Variables** | **Beta's** | **Expected Change** |
| kohl\_Regular\_price | -0.04802 | 0.998014297 |
| kohl\_disc\_perc | -0.12089 | -0.12089 |
| Target\_markdown\_price | -0.03553 | 0.998530399 |
| Price\_rat\_amazon\_final\_pr | 0.01295 | 1.000536179 |
| TCIN\_var | 0.10975 | 0.10975 |
| Amz\_Avg\_negative\_sent\_score | -0.49148 | -0.49148 |
| reviews\_3\_M | -0.00357 | -0.00357 |
| Avg\_wt\_score | 0.03807 | 0.03807 |
| kohls\_Number\_of\_images | 0.01426 | 0.01426 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | exp((beta)\*log([100+p]/100)) |  |
| **Price\_Elasticity** | Percentage Change :p=10 |  |
|  |  |  |
|  |  |  |
|  | kohl\_Regular\_price | -0.04802 |
|  | Target\_markdown\_price | -0.03553 |
|  | Price\_rat\_amazon\_final\_pr | 0.01295 |

**Pre-modifications over data**

1. It is most preferable to have more data points among all data which helps us providing better fit.

**Pre-modifications over defining variables:**

1. Defining variables should be of identical and independently distributed (property of iid/normality) results in overcoming the problem of multi-collinearity.
2. Reduce as many number of missing cases (values) as possible which it helps in force fitting the data by replacing its value by zero (results in reducing average/means).
3. It is advisable to have more periodical price changes results in establishing better elasticity.

**Conclusions on Model output**

1. As there are no much price changes over weeks, the price is in-elastic except Amazon regular price.
2. It is recommended to take 10% change in price for later weeks following dynamic pricing.
3. Since F-statistic is enough large, we reject null hypothesis and conclude that sales are having significant relationship among all explanatory variables.