**Accessory**

Call:

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

Residuals:

Min 1Q Median 3Q Max

-0.9283 -0.1945 -0.0724 0.0702 1.2827

Coefficients: (1 not defined because of singularities)

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

(Intercept) 1.294479 0.184780 7.01 1.2e-11 \*\*\*

kohl\_final\_price -0.452597 0.032626 -13.87 < 2e-16 \*\*\*

Target\_Regular\_price 0.165935 0.037285 4.45 1.1e-05 \*\*\*

Target\_disc\_perc -4.539668 5.127070 -0.89 0.377

Amz\_pdt\_desc\_length 0.128959 0.064519 2.00 0.046 \*

Target\_pdt\_desc\_length 0.000173 0.000332 0.52 0.603

Amz\_Review\_count 0.037790 0.008071 4.68 4.0e-06 \*\*\*

reviews\_3\_M -0.048859 0.028885 -1.69 0.092 .

Avg\_wt\_score 0.108399 0.196954 0.55 0.582

pos\_avg\_wt\_score -0.188099 0.200847 -0.94 0.350

Neg\_avg\_wt\_score NA NA NA NA

---

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

Residual standard error: 0.297 on 369 degrees of freedom

Multiple R-squared: 0.514, Adjusted R-squared: 0.502

F-statistic: 43.3 on 9 and 369 DF, p-value: <2e-16

|  |  |  |
| --- | --- | --- |
|  | **Accessory** |  |
|  |  |  |
|  |  |  |
| **Variables** | **Beta's** | **Expected Change** |
| kohl\_final\_price | -0.452597 | 0.981440189 |
| Target\_Regular\_price | 0.165935 | 1.006892137 |
| Target\_disc\_perc | -4.539668 | -4.539668 |
| Amz\_pdt\_desc\_length | 0.128959 | 0.128959 |
| Target\_pdt\_desc\_length | 0.000173 | 0.000173 |
| Amz\_Review\_count | 0.03779 | 0.03779 |
| reviews\_3\_M | -0.048859 | -0.048859 |
| Avg\_wt\_score | 0.108399 | 0.108399 |
| pos\_avg\_wt\_score | -0.188099 | -0.188099 |
| Neg\_avg\_wt\_score | NA | NA |
|  |  |  |
|  |  |  |
|  |  |  |
| **Expected Y for log Var** | exp((beta)\*log([100+p]/100)) |  |
|  | Percentage Change :p=10 |  |
|  |  |  |
|  |  |  |
| **Price\_Elasticity** | kohl\_final\_price | -0.452597 |
|  | Target\_Regular\_price | 0.165935 |

**Pre-modifications over data**

1. It is most preferable to have more data points among all data which helps us providing better fit.
2. We should never force the regression line through the origin without a clear theoretical justification for doing so. It makes our model diagnostics unreliable.

**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.
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.