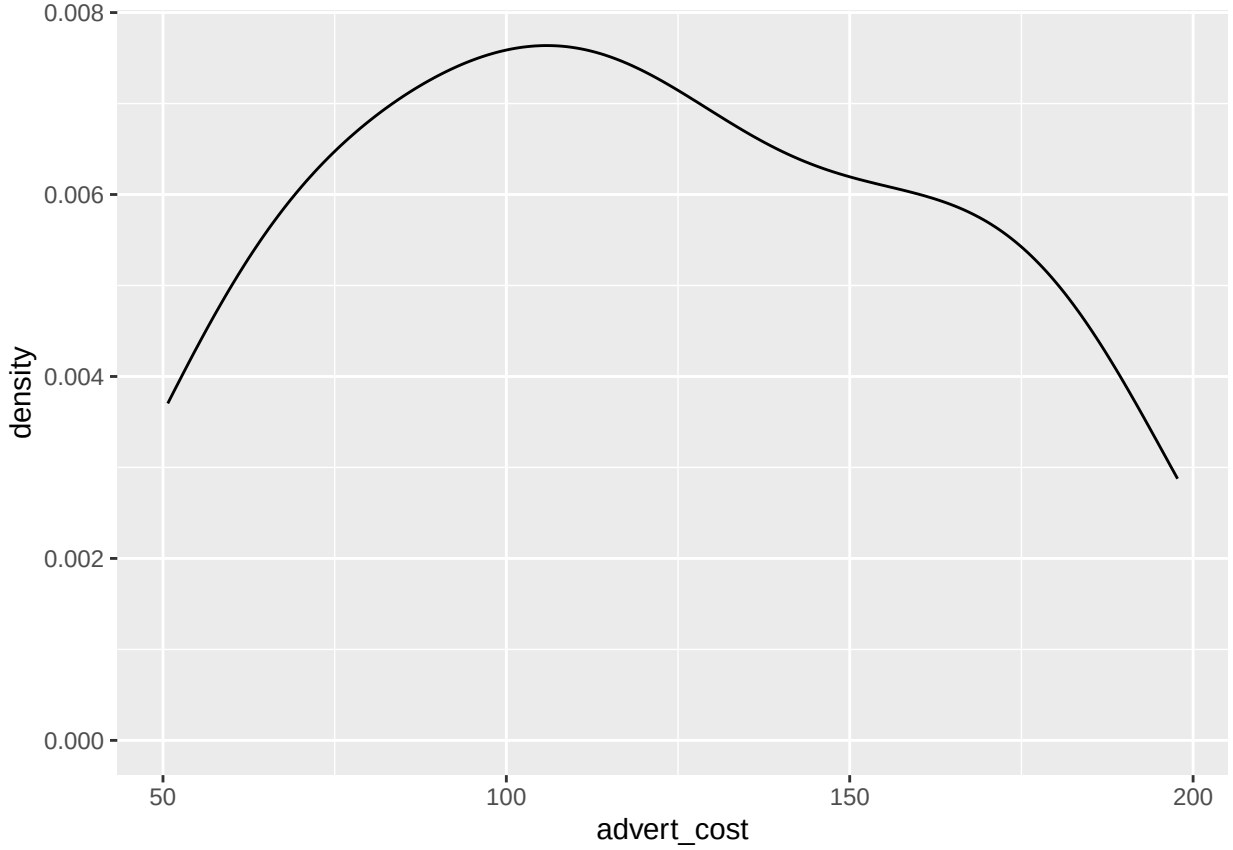
Advertising vs Revenue - SOLRush

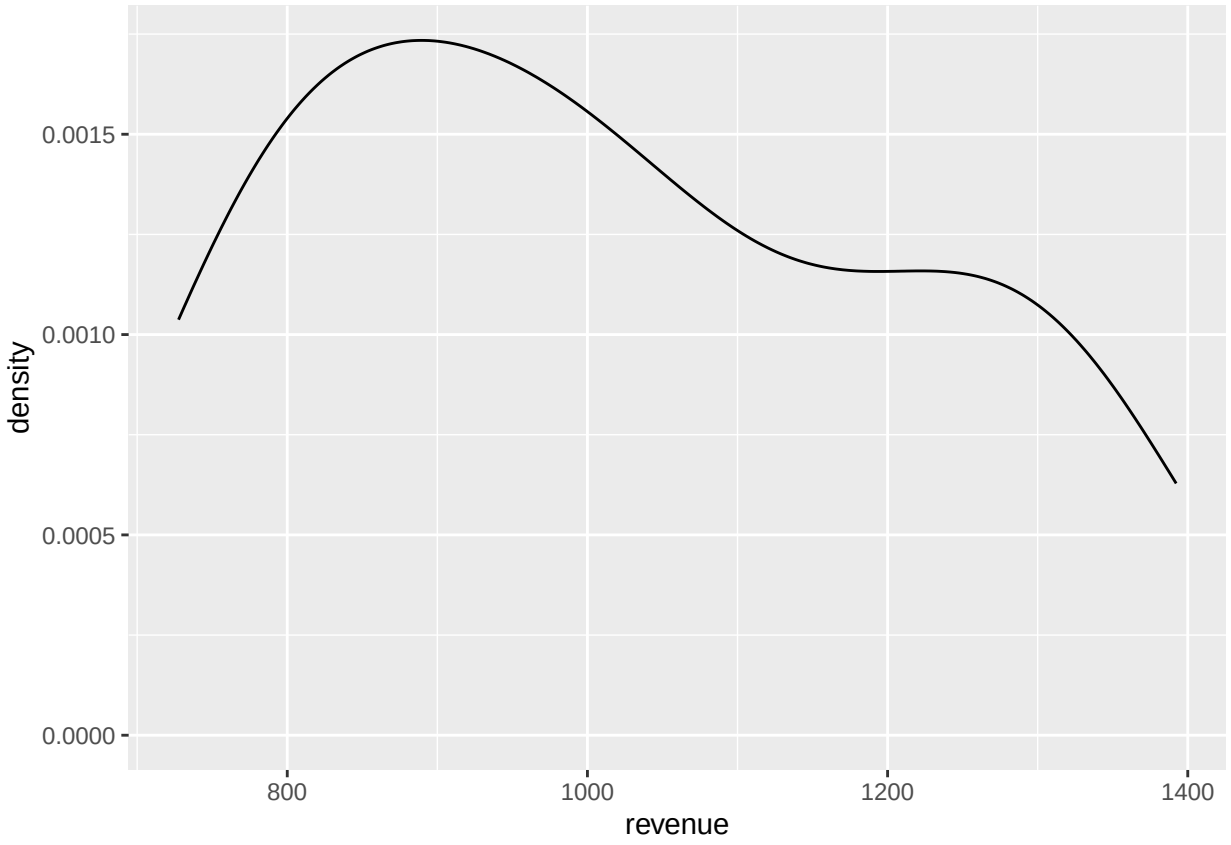
2024-10-12

Visualize distribution of advertising cost

```
## Registered S3 method overwritten by 'quantmod':
##   method            from
##   as.zoo.data.frame zoo
```



Visualize distribution of revenue



Simple Linear Regression Results

```
##
## Call:
## lm(formula = revenue ~ advert_cost, data = training_set)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -221.723    7.456   14.662   21.730   39.488
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 491.5009    27.5208   17.86   <2e-16 ***
## advert_cost   4.4150     0.2205   20.03   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 55.22 on 38 degrees of freedom
## Multiple R-squared:  0.9135, Adjusted R-squared:  0.9112
## F-statistic: 401.1 on 1 and 38 DF,  p-value: < 2.2e-16
```

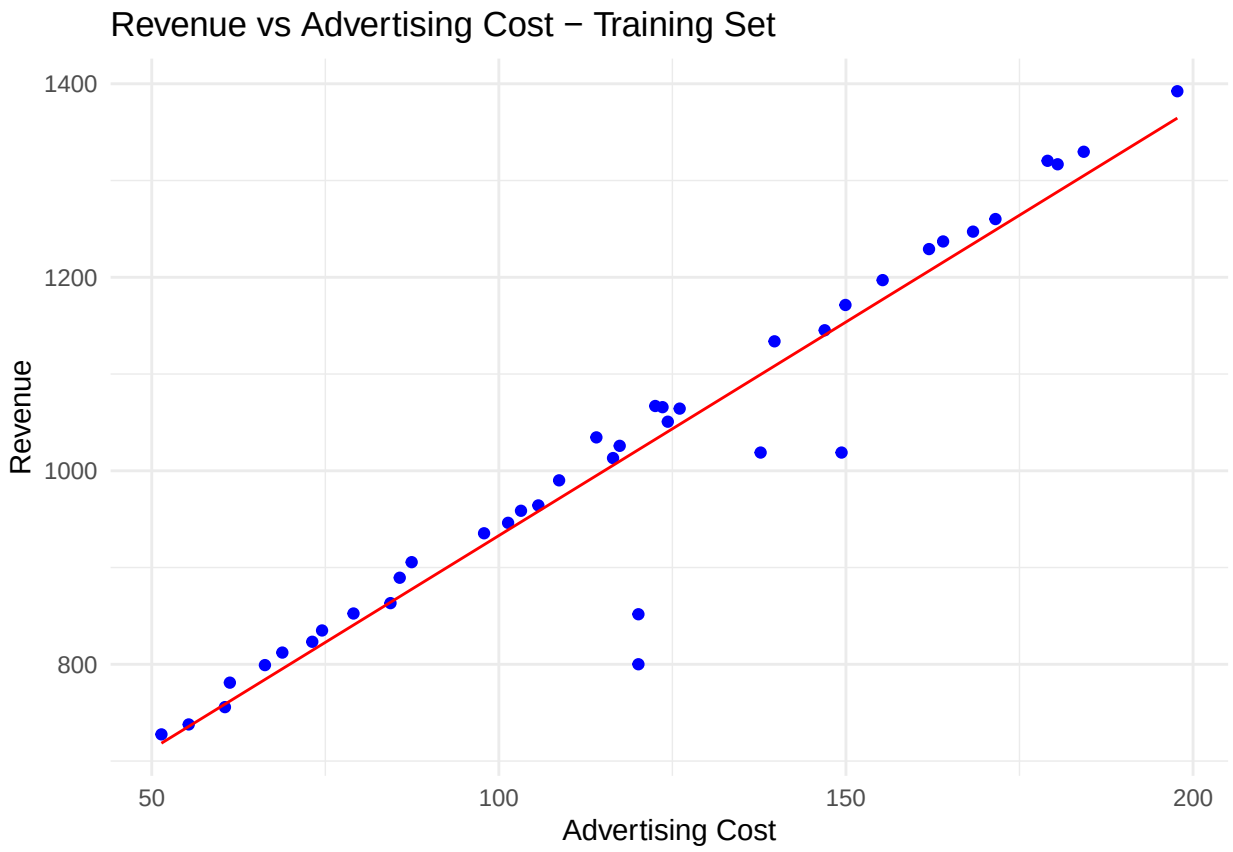
Conclusion

- Strong correlation between advertising and revenue:Our model shows a remarkably strong relationship between advertising spend and revenue generation. With an R-squared value of 0.9135, we can confidently say that over 91% of the variation in revenue is explained by advertising costs. This is an

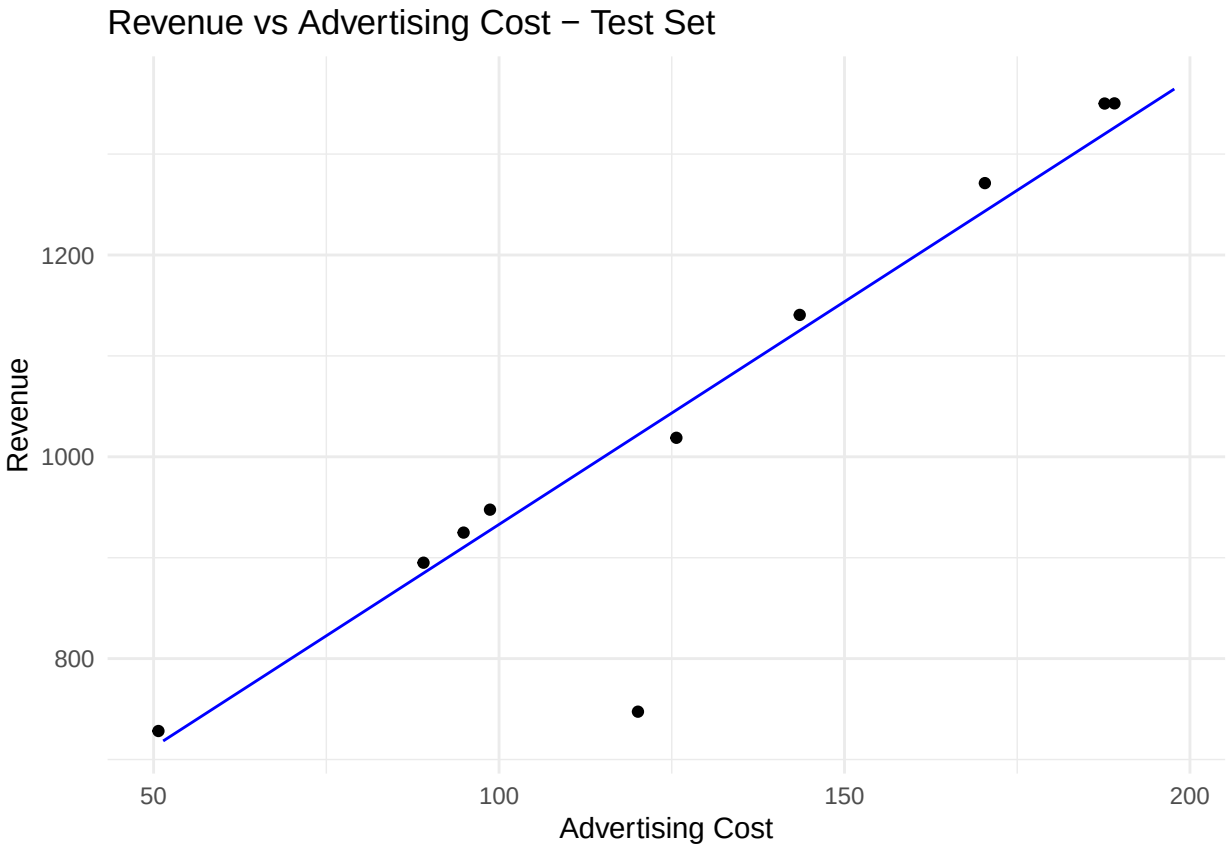
exceptionally high correlation for a new product, indicating that our marketing efforts are hitting the mark.

- Significant return on advertising investment: The model suggests that for every dollar spent on advertising, we're generating approximately $4.42 in revenue (coefficient of 4.4150). This is an impressive return on investment, especially for a new product. It indicates that our advertising strategy is not just effective, but highly efficient in converting spend to sales.
- Reliable baseline revenue: Even without advertising, the model predicts a baseline revenue of about $491.50 (intercept value). This suggests our product has inherent appeal or we have effective non-advertising channels driving sales. It's a solid foundation to build upon.
- Statistical confidence: With p-values well below 0.001 for both the intercept and advertising cost coefficient, we can be extremely confident in these results. They're not just chance findings.

Visualize representation of linear regression model on the training set



Visualize plot of the linear regression model on the testing set



Recommendations

- Accelerate advertising spend:Given the strong ROI, I recommend significantly increasing our advertising budget. Every dollar we're not spending on ads is potentially $3.42 in unrealized profit. We should aggressively scale up our most effective advertising channels.
- Maintain marketing mix:Whatever blend of advertising channels we're using, it's working exceptionally well. Let's document our current strategy meticulously and use it as a blueprint for future product launches.
- Explore economies of scale:With such a strong response to advertising, we should investigate bulk media buys or longer-term advertising contracts. This could potentially lower our per-unit advertising costs and further improve our ROI.
- Set ambitious sales targets:The model suggests our product has significant growth potential. Let's set aggressive sales targets and build out the supply chain and distribution networks to support rapid scaling.