



Impact Analysis of Media Spending on Sales

EXPLORING THE EFFECTIVENESS OF TV, RADIO, AND SOCIAL MEDIA INVESTMENTS

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INTRODUCTION

This report provides a comprehensive analysis of how different media spending avenues—TV, Radio, and Social Media—impact sales. Utilizing a Linear Regression model, this analysis sheds light on which media investments yield the highest returns for your company. Understanding these dynamics is crucial for optimizing marketing budgets and enhancing overall business strategy.

In the context of our model, **COEFFICIENTS** represent the extent to which each form of media spending contributes to sales. A higher coefficient value indicates a stronger impact on sales per unit increase in spending. **R²** score is a statistical measure of how close the data are to the fitted regression line, with a higher value indicating better model performance. The errors—Mean Absolute Error (MAE), Mean Squared Error (MSE), and Root Mean Squared Error (RMSE)—help in quantifying the accuracy of predictions made by our model.

The ultimate goal is to harness these insights to refine our marketing strategies and drive effective spending to maximize sales outcomes.

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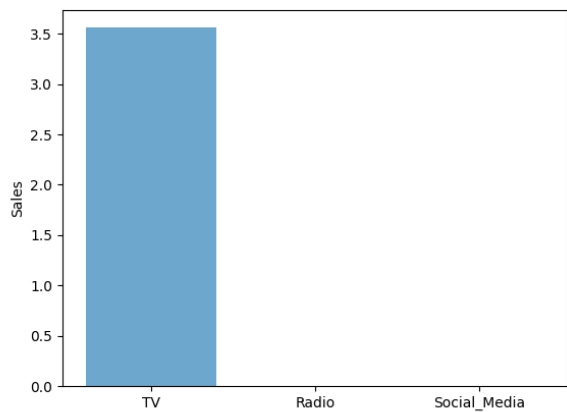
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OVERVIEW OF ATTRIBUTES AND THEIR IMPACT ON SALES

Impact of Different Media on Sales

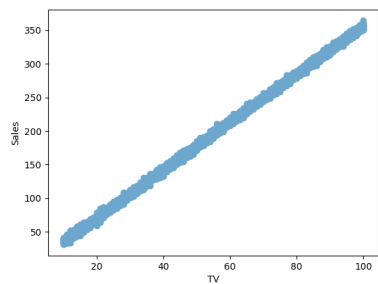


TV: **3.560** Indicates the strongest influence on sales, suggesting that a unit increase in TV spending leads to an approximately 3.56unit increase in sales.

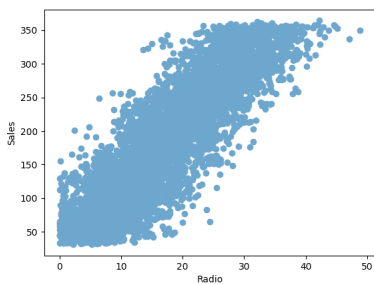
RADIO: **0.003** Shows a minimal impact on sales per unit spend, implying lesser efficiency compared to TV.

SOCIAL MEDIA: **0.004** Slightly more effective than radio but still significantly less than TV.

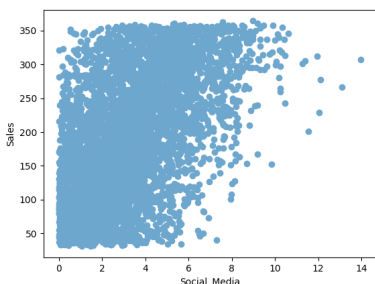
Visual Insights



Bar chart showing the coefficients impact with TV having the highest bar, indicating the strongest influence on sales compared to Radio and Social Media.



Scatter plot illustrating a strong linear relationship between TV spending and sales, indicating a consistent increase in sales with increased TV advertising.



Scatter plot showing a wide spread of data points for Radio spending versus sales, suggesting a less consistent and lower impact on sales.

Model Performance Indicators

The model exhibits excellent predictive performance with an **R2** score of **0.999**. The errors are minimal, with a MAE of **2.437**, MSE of **9.228**, and RMSE of **3.038**, indicating high accuracy in sales predictions based on media investments.

AI WARNING

This document contains content that has been generated by an artificial intelligence model. While the information presented is based on data-driven analysis, it is important to exercise caution and critical thinking when interpreting the results. Human oversight and expert judgment are essential to ensure the accuracy and relevance of the insights provided.