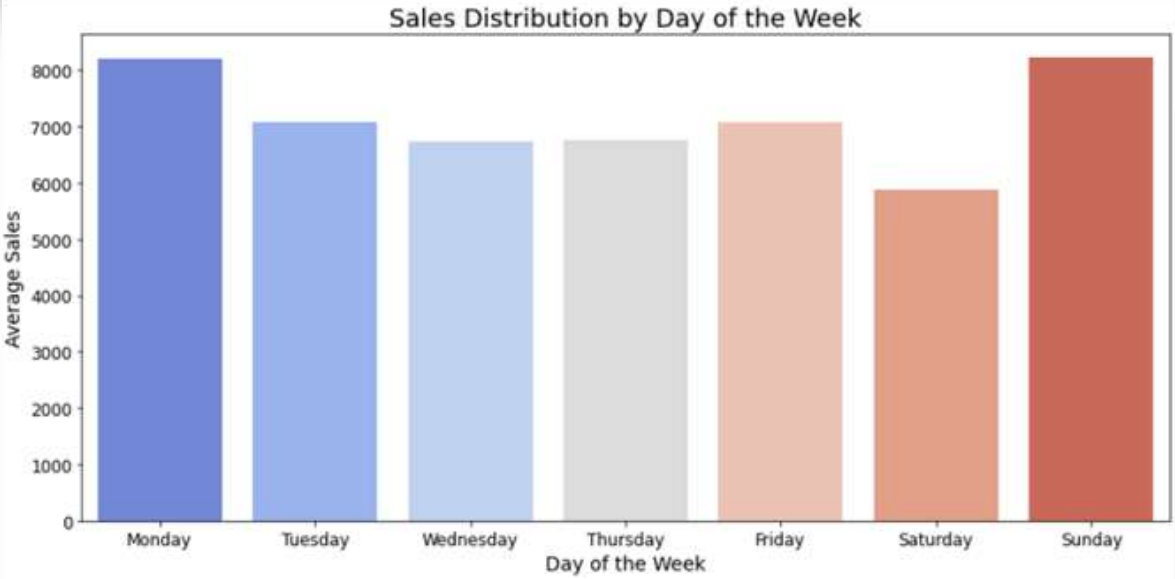

Figure 9: Sales Distribution by Day of the Week

Analyzing weekly sales patterns helps predict sales by identifying consistent trends and high-demand days, such as weekends

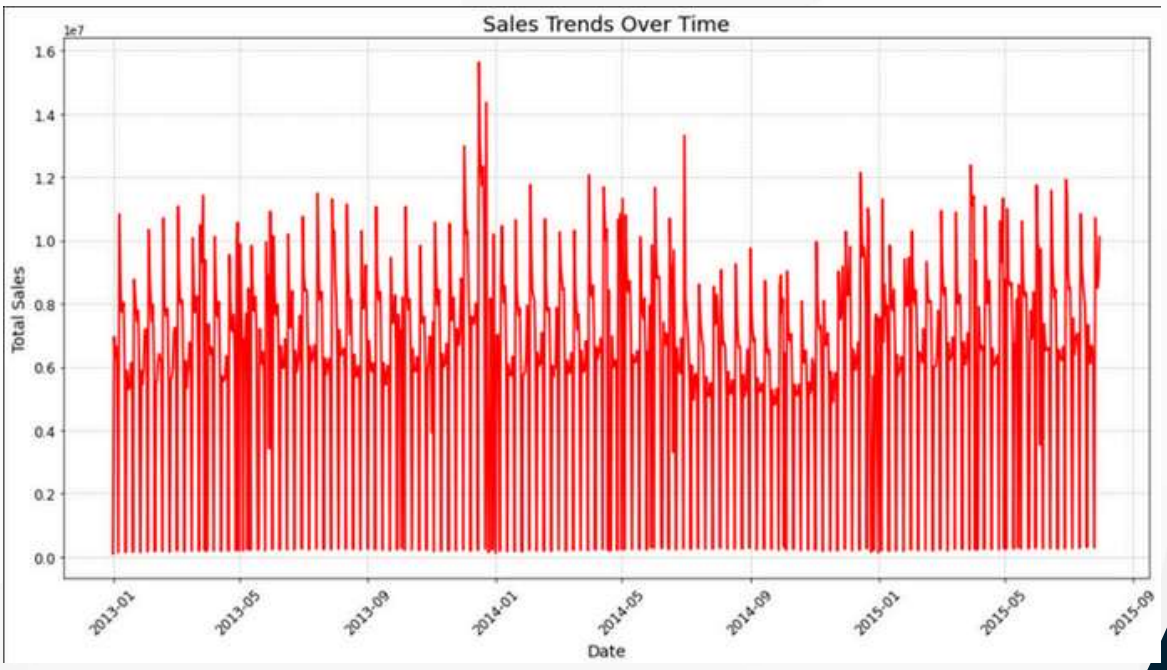

Figure 10: Sales Trends Over Time

Understanding sales trends over time is crucial for identifying patterns, seasonality, and anomalies. It helps detect fluctuations and trends, revealing monthly or seasonal variations that improve forecasting accuracy.

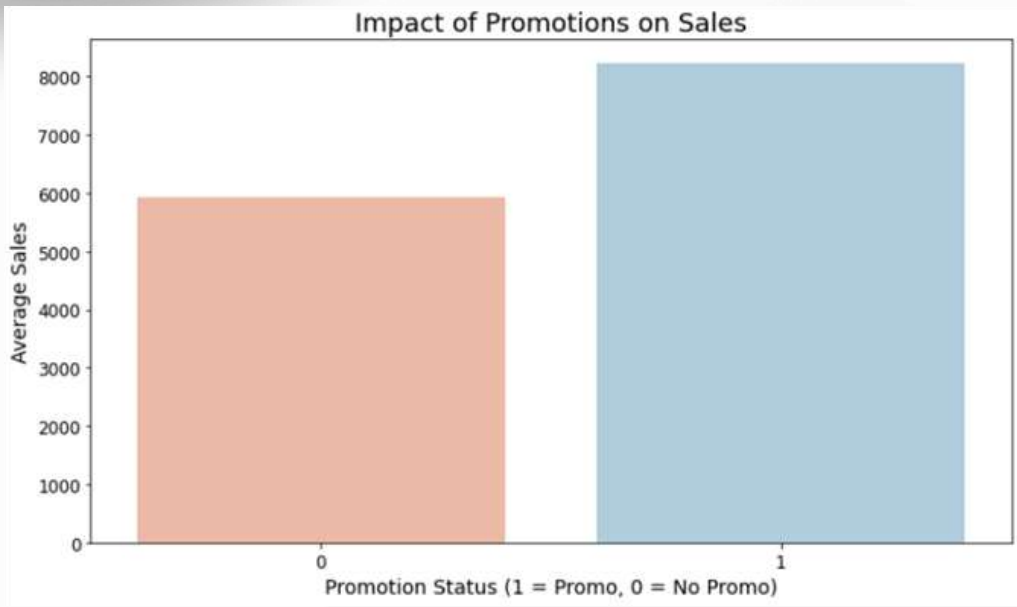

Figure 11: Impact of Promotions on Sales

Promotions significantly influence sales and must be factored into forecasting models. They help quantify sales boosts, assess promotion effectiveness, and determine their importance as a key predictive feature.

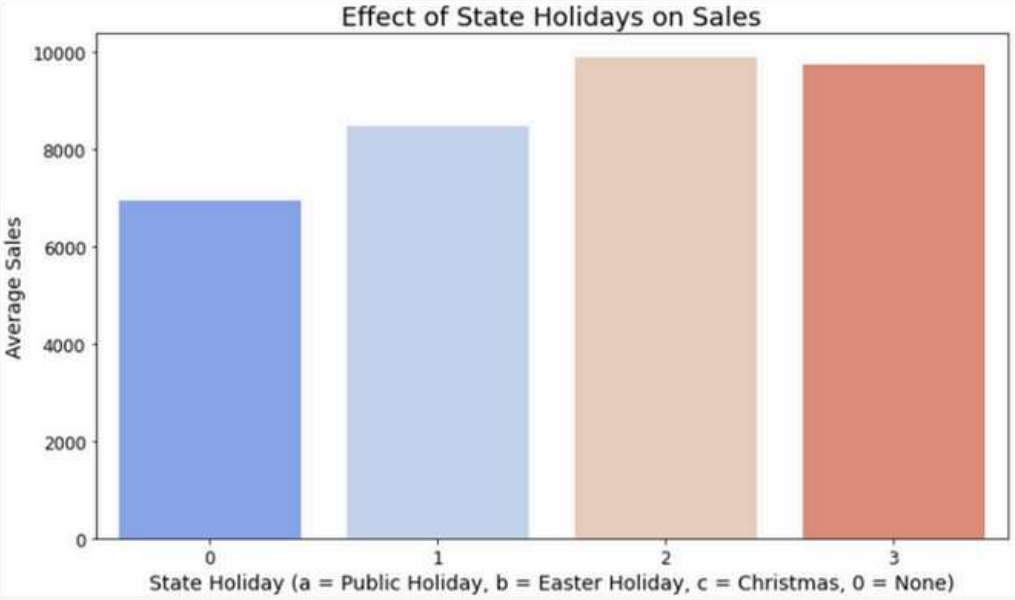

Figure 12: Effect of State Holidays on Sales

State holidays impact sales by either increasing or decreasing activity, depending on the holiday type. Analyzing these patterns helps measure their influence on sales.

Figure 13: Sales Distribution by Store Type

Different retail types impact sales by addressing unique customer needs. Analyzing sales data across categories helps businesses identify trends and strengths, enabling tailored strategies for informed decision-making.

Figure 14: Customer Count vs Sales Scatter Plot

The strong correlation between customers and sales makes understanding their relationship crucial for accurate predictions.

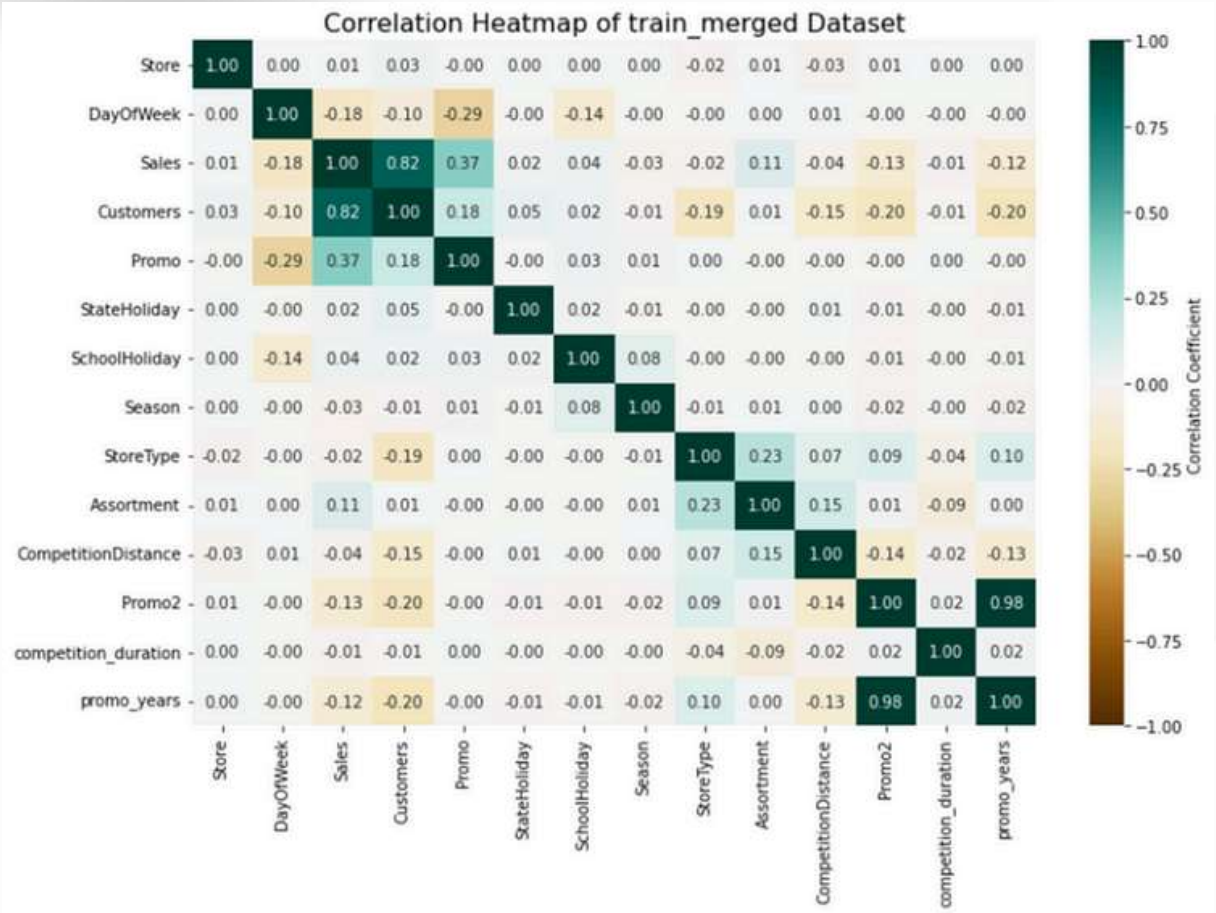

Figure 15: Correlation Heatmap

- **Promo and Sales(0.37)**: Promotions have a noticeable positive impact. This feature is critical for capturing the effect of marketing campaigns on sales.

- **DayOfWeek and Sales(-0.18)**: Including this feature will help the model account for day-specific fluctuations in sales, which is crucial for forecasting.

- Promo(0.37) and DayOfWeek(-0.18) have the strongest correlations with sales, making them essential for capturing promotional and temporal trends.

- While individual correlations of Features like Assortment and StoreType with sales are weak, their combined effects can enhance model performance by accounting for external and store-specific factors.