

Business Insights from Data Analysis

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1. Data Preparation:

- Utilized Python libraries such as Pandas, NumPy, Matplotlib, and Seaborn.
- Merged datasets on keys to create a unified dataset after cleaning.

2. Insights from Exploratory Data Analysis:

- Missing Values Analysis: Visualized and addressed gaps for cleaner data.
- Transaction Trends: Identified high-activity periods to leverage for campaigns.
- Regional Performance: Highlighted key regions contributing to sales.
- Product Insights: Recognized top-selling products for inventory optimization.
- Correlation Analysis: Revealed relationships between sales and frequency.
- Signup Trends: Tracked customer acquisition spikes for targeted promotions.

3. Recommendations:

- Address missing data to improve dataset quality.
- Focus marketing campaigns on high-performing regions and untapped markets.
- Diversify the product portfolio to reduce risks.
- Align campaigns with seasonal trends to boost engagement.
- Leverage correlations to refine pricing strategies.

Conclusion:

This analysis offers actionable insights to improve business strategies, customer acquisition, and operational efficiency, driving long-term success.