

Sales Vendor Performance Analysis Report

Executive Summary

This report presents a comprehensive analysis of vendor-level sales and profitability data. The objective was to evaluate vendor performance, identify key revenue contributors, and provide actionable insights for strategic decision-making. The analysis was conducted using SQL and Python-based exploratory data techniques.

Project Objectives

- Identify top-performing vendors based on revenue and gross profit.
- Apply Pareto (80/20) analysis to determine revenue concentration.
- Calculate key performance indicators (KPIs) such as Total Sales and Gross Profit.
- Perform statistical testing to evaluate vendor performance differences.
- Provide data-driven recommendations for vendor optimization.

Methodology

- Data Cleaning and preprocessing using Pandas.
- Aggregation of KPIs using SQL queries and Python calculations.
- Computation of Contribution % and Cumulative Contribution %.
- Pareto analysis visualization (80/20 rule).
- Confidence Interval estimation and Hypothesis testing.

Key Findings

- Revenue contribution is highly concentrated among a small group of vendors.
- Top-performing vendors significantly impact overall profitability.
- Statistical testing confirmed meaningful differences in vendor performance.
- Underperforming vendors present optimization opportunities.

Business Recommendations

- Focus strategic partnerships on high-performing vendors.
- Reassess contracts and cost structures of underperforming vendors.
- Monitor vendor performance using quarterly KPI dashboards.
- Adopt data-driven vendor selection strategies.

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