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Sales

Gaining Insight into Amazon's Sales Data

Analyzing Factors Affecting Sales Across Different Branches

Agenda

- **Introduction**

- **Data Preparation**

- **Analysis Breakdown**

- **Product Analysis**

- **Sales Analysis**

- **Customer Analysis**

- **Key Insights and Findings**

- **Conclusion**

Introduction

The primary goal of this project is to gain insights into Amazon's sales data by analyzing transactions from three branches in Myanmar. These are Mandalay, Yangon, and Naypyitaw.

The aim is to understand the key factors affecting sales performance across different branches, including product line success, customer behavior, and sales trends. Additionally, this analysis will help identify opportunities for strategic improvements to enhance overall sales effectiveness.

Data Preparation

- **Data Wrangling**: In this step, I inspected the dataset to identify any NULL values and missing entries. I applied appropriate replacement methods to ensure the data's accuracy and integrity.

- **Feature Engineering**: I created new columns derived from the existing data, which helped enhance the overall analysis and provided deeper insights into sales trends.

- **Exploratory Data Analysis (EDA)**: I conducted an exploratory analysis to systematically examine the data, aiming to answer the key questions of the project and guide my further analysis.

amazondata
- invoice_id VARCHAR(30)
- branch VARCHAR(30)
- city VARCHAR(30)
- customer_type VARCHAR(30)
- gender VARCHAR(10)
- product_line VARCHAR(100)
- unit_price DECIMAL(10,2)
- quantity INT
- VAT DECIMAL(10,2)
- total DECIMAL(10,2)
- date DATE
- Time TIME
- payment_method VARCHAR(30)
- cogs DECIMAL(10,2)
- gross_margin_percentage FLOAT(11,9)
- gross_income DECIMAL(10,2)
- rating DOUBLE
- time_of_day VARCHAR(20)
- day_name VARCHAR(20)
- month_name VARCHAR(20)

Analysis Breakdown

- **Product Analysis**: Evaluate product lines' performance, identify top sellers, and assess VAT impact.

- **Sales Analysis**: Analyze monthly revenue trends and peak sales periods.

- **Customer Analysis**: Examine customer types, gender distribution, and sales timing.

Product Analysis

○ *Key Findings*

Distinct Product Lines:
There are six distinct product lines in our dataset. Which are Food and Beverages, Sports and Travel, Electronic Accessories, Fashion Accessories, Home and Lifestyle, Health and Beauty.

product_line
Food and beverages
Sports and travel
Electronic accessories
Fashion accessories
Home and lifestyle
Health and beauty

Top Performer:
Product Line 'Food and Beverages' has the highest sales which are K56144.96, contributing 17.38% to total revenue.

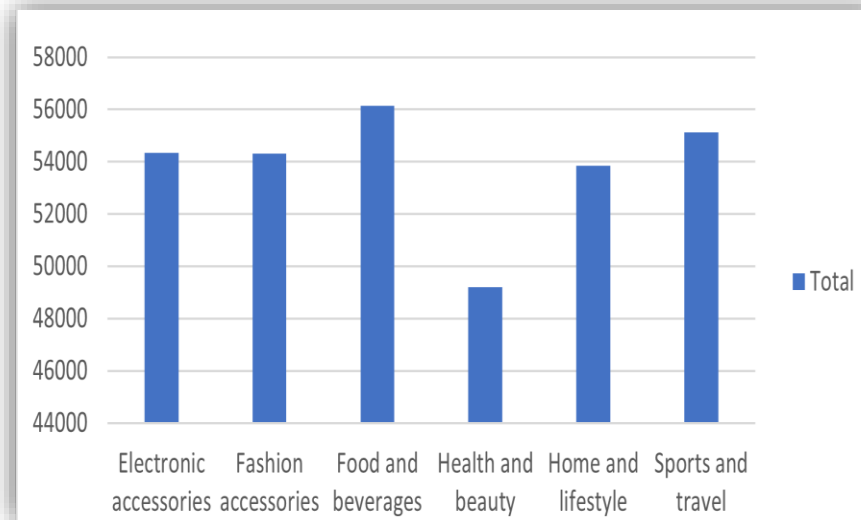| product_line	total_revenue	revenue_percentage
Food and beverages	56144.96	17.38

Importance of product analysis

Understanding product performance is essential for driving sales success. It helps identify bestsellers, optimize inventory, and enhance customer satisfaction. Insights into customer preferences allow businesses to tailor offerings, improve marketing strategies, and make informed decisions about product development. By focusing on high-performing products and addressing those needing improvement.

Product Analysis

Visual Aid: Here is sales by product line ➡️

Value Added Tax (VAT):
Product Line Food and Beverages incurred the highest VAT of K2673.68, highlighting its financial impact.

product_line	tax
Food and beverages	2673.68
Sports and travel	2625.07
Electronic accessories	2587.61
Fashion accessories	2586.13
Home and lifestyle	2564.90
Health and beauty	2342.66

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Product Analysis

Performance Indicators: Here categorized each product line as 'Good' or 'Bad' based on average sales performance.

product_line	total_sales	avg_total	sales_status
Health and beauty	49193.84	323.643684	Bad
Electronic accessories	54337.64	319.633176	Good
Home and lifestyle	53861.96	336.637250	Good
Sports and travel	55123.00	332.066265	Good
Food and beverages	56144.96	322.672184	Good
Fashion accessories	54306.03	305.090056	Good

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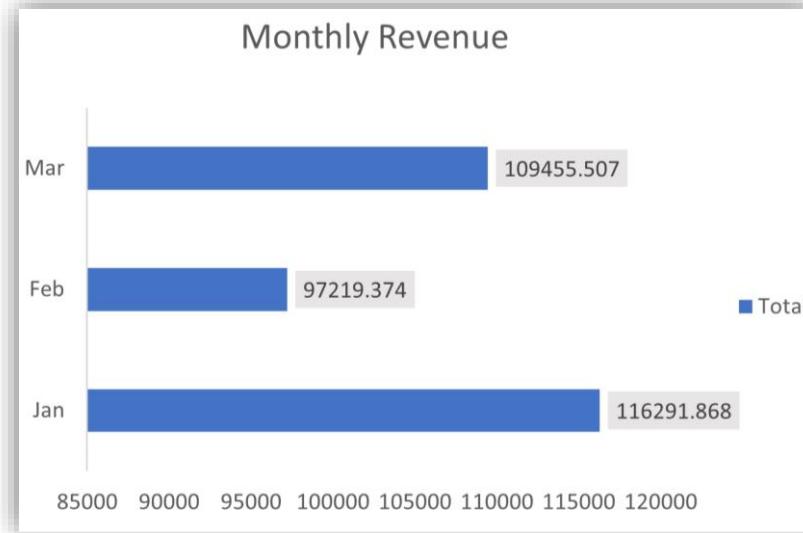
Sales Analysis

o **Key Findings**

Monthly Revenue: The total revenue for each month is displayed in the chart.

Peak Month: "The cost of goods sold peaked in January which is K110,754. indicating possible seasonal trends.

Monthly Revenue

Month	Total
Mar	109455.507
Feb	97219.374
Jan	116291.868

(Chart x-axis: 85000, 90000, 95000, 100000, 105000, 110000, 115000, 120000)

Importance of sales analysis

Sales analysis is vital for understanding revenue trends and customer behavior. It enables businesses to identify peak sales periods, assess the effectiveness of marketing strategies, and optimize pricing. By analyzing sales data, companies can make informed decisions to enhance profitability, improve inventory management, and tailor their offerings to meet customer demands, ultimately driving sustainable growth.
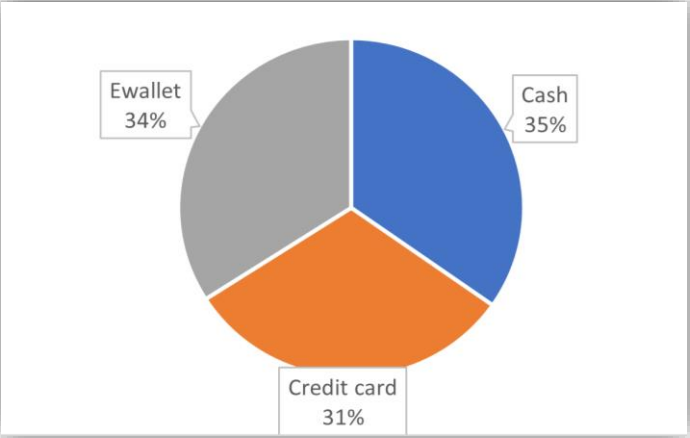
Sales Analysis

Payment Methods: The most frequently used payment method is 'E-Wallet', which accounts for 34.50% of total transactions.
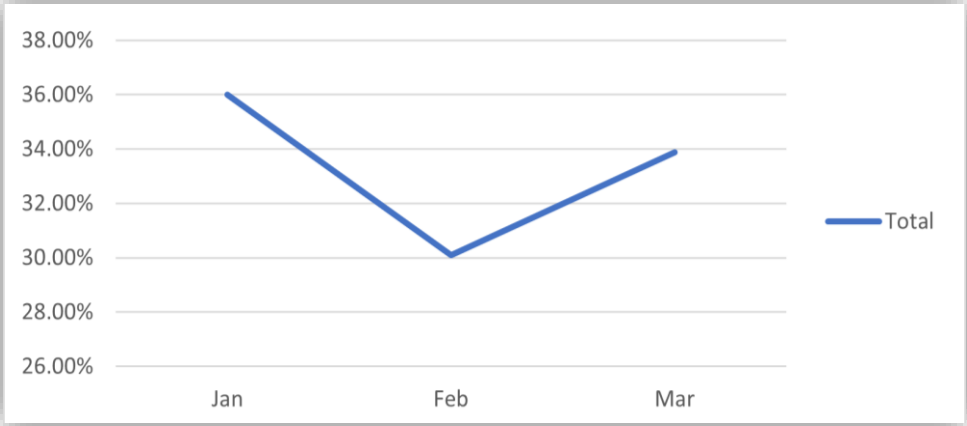
Visual Aid:

payment_method	frequency
Ewallet	345
Cash	344
Credit card	311

payment method distribution.

pie chart

monthly revenue

Line graph

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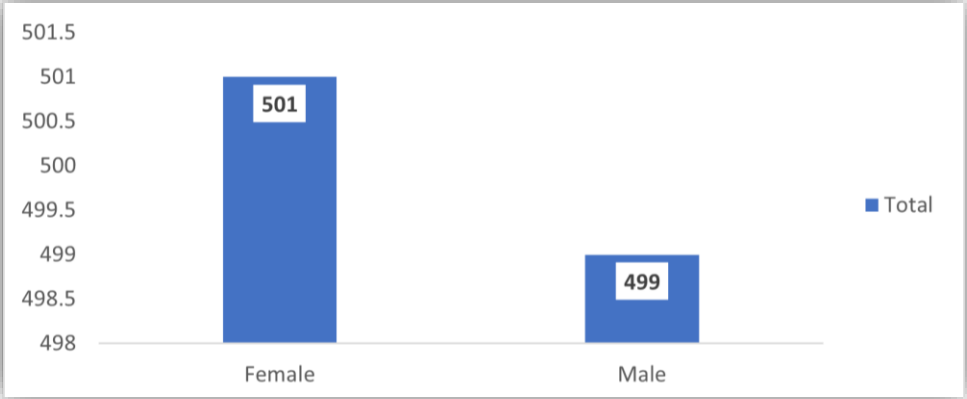
Customer Analysis

○ *Key Findings*

Top Revenue Customer Type: The Members is the Customer Type who contributes the highest revenue.

customer_type	total_revenue
Member	164223.81
Normal	158743.62

Gender Distribution: "The predominant gender among customers is Female, with 51.98% of total sales."

gender	total_sales	percentage
Female	167883.26	51.98
Male	155084.17	48.02

Importance of customer segmentation

Customer segmentation is crucial for tailoring marketing strategies and enhancing customer experiences. By categorizing customers based on behaviors, preferences, and demographics, businesses can identify target audiences and personalize offerings. This approach leads to increased customer satisfaction, improved retention rates, and higher profitability. Understanding distinct segments enables companies to allocate resources effectively and develop products that resonate with specific customer needs.
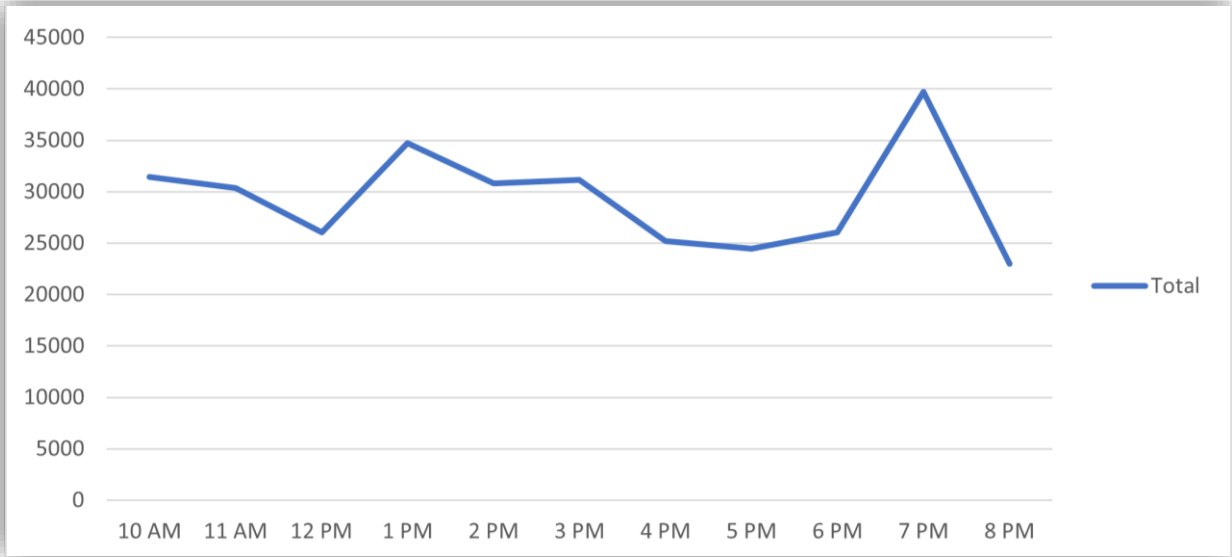
Customer Analysis

Sales Occurrences: By our analysis, the Sales peak during in Afternoon most of the times in a week.

time_of_day	total_sales	transaction_count
Afternoon	172468.93	528
Evening	88699.50	281
Morning	61799.00	191

Visual Aid: Line graph for sales occurrences by time of day.

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Key Insights and Findings

Top-Performing Product Lines:
 Food and Beverages is leading product lines contributing the highest sales.
Notable variations in performance across branches.

Sales Trends:
Peak sales periods observed during January month.
The correlation between marketing campaigns and sales spikes.

Customer Segmentation:
Members and Normal customer types driving revenue, preferences varying by branch.
Predominantly Female gender is influences purchasing behavior.

Payment Methods:
E-Wallet is the most frequently used payment method.
Analysis of customer feedback on payment experiences highlights areas for improvement.

VAT Analysis:
Food and Beverages incurred the highest VAT of
K2673.68. his impact suggest opportunities for pricing adjustments and cost management.

Conclusion

This project has provided valuable insights into Amazon's sales data across its branches in Mandalay, Yangon, and Naypyitaw. Through comprehensive analysis, we identified key product performance metrics, sales trends, and customer segments that influence overall revenue. These findings highlight areas for improvement and optimization within the sales strategy.

Next Steps

1. **Deep Dive into Customer Segmentation**: Explore additional demographics and psychographics to refine marketing strategies.
2. **Product Development Insights**: Investigate customer feedback on underperforming product lines for potential improvements.
3. **Seasonal Sales Patterns**: Analyze sales data over multiple years to identify long-term trends and seasonality.
4. **Pricing Strategy Evaluation**: Assess the impact of pricing adjustments on sales and customer satisfaction.
5. **Competitive Analysis**: Compare findings with industry benchmarks to gauge performance relative to competitors.