Diwali Sales Analysis: Unveiling Consumer Insights

Transforming Data into Actionable Strategies for Enhanced Customer Experience and Revenue Growth!
Presented by: Rohit Raj

Join me on a journey through our sales data to discover:

- **Who our customers are and what they want**
- **Key trends driving sales during Diwali**
- **Strategic recommendations to maximize future revenue**

Overview of the Analysis

Objective:

Enhance customer experience by identifying key trends in purchasing behavior.

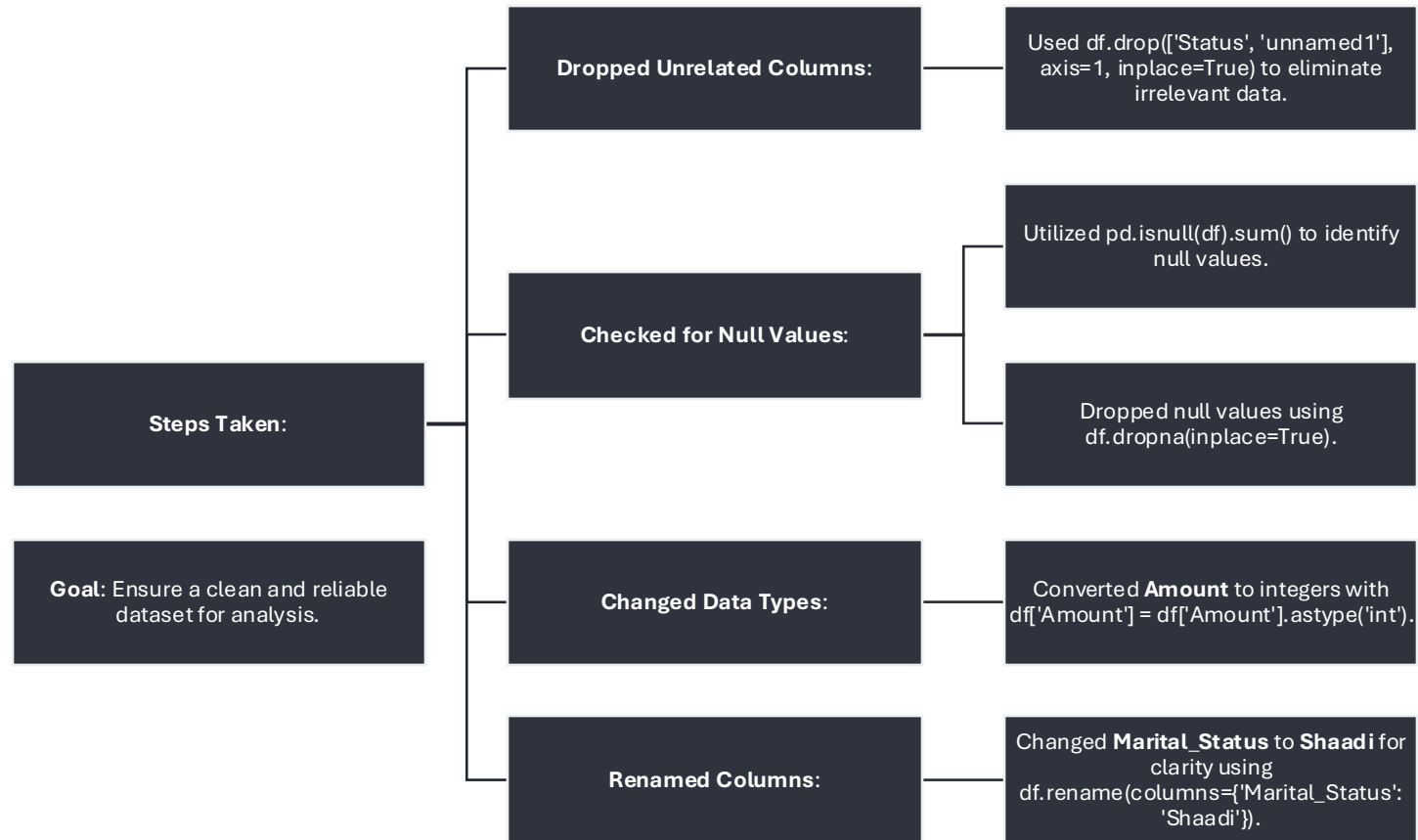**Boost revenue** through data-driven, targeted strategies.

Data Summary:

Analyzed a dataset of **11,251 entries** across **15 columns**.

Focused on **customer demographics, buying patterns,** and overall **sales performance**.

Cleaned and processed data to ensure accuracy, removing null values and duplicates for more reliable insights.

Data Cleaning and Preparation

Steps Taken:

Goal: Ensure a clean and reliable dataset for analysis.

Dropped Unrelated Columns:

Used df.drop(['Status', 'unnamed1'], axis=1, inplace=True) to eliminate irrelevant data.

Checked for Null Values:

Utilized pd.isnull(df).sum() to identify null values.

Dropped null values using df.dropna(inplace=True).

Changed Data Types:

Converted **Amount** to integers with df['Amount'] = df['Amount'].astype('int').

Renamed Columns:

Changed **Marital_Status** to **Shaadi** for clarity using df.rename(columns={'Marital_Status': 'Shaadi'}).

Demographics Overview

User ID: Unique identifier for each customer.

Customer Name: Personalizes interactions and marketing efforts.

Product ID: Tracks individual product performance.

Gender: Analyzes purchasing trends based on gender.

Age Group: Categorizes customers for targeted marketing.

Age: Provides detailed insights into customer lifecycle.

Marital Status: Identifies potential family-oriented buying patterns.

State: Geographical distribution of customers.

Zone: Further segmentation for localized marketing strategies.

Occupation: Understanding customer backgrounds to tailor offerings.

Product Category: Analyzes sales performance by product type.

Orders: Tracks purchase frequency and customer loyalty.

Amount: Evaluates spending behavior and revenue generation.

Descriptive Statistics

Overview:

- **Statistical Summary:**
  - Utilized df.describe() to derive key statistical measures from the dataset.
- **Key Insights:**
- **Average Age:**
  - The average age of customers is **35.41 years**, indicating a predominantly adult customer base.
- **Average Orders per Customer:**
  - On average, each customer places **2.49 orders**, suggesting frequent purchasing behavior.
- **Average Spending Amount:**
  - Customers spend an average of **9,453.61**, reflecting a significant investment in products.
- **Goal:**
- To provide a **quantitative summary** of customer behaviors, enabling data-driven decision-making.
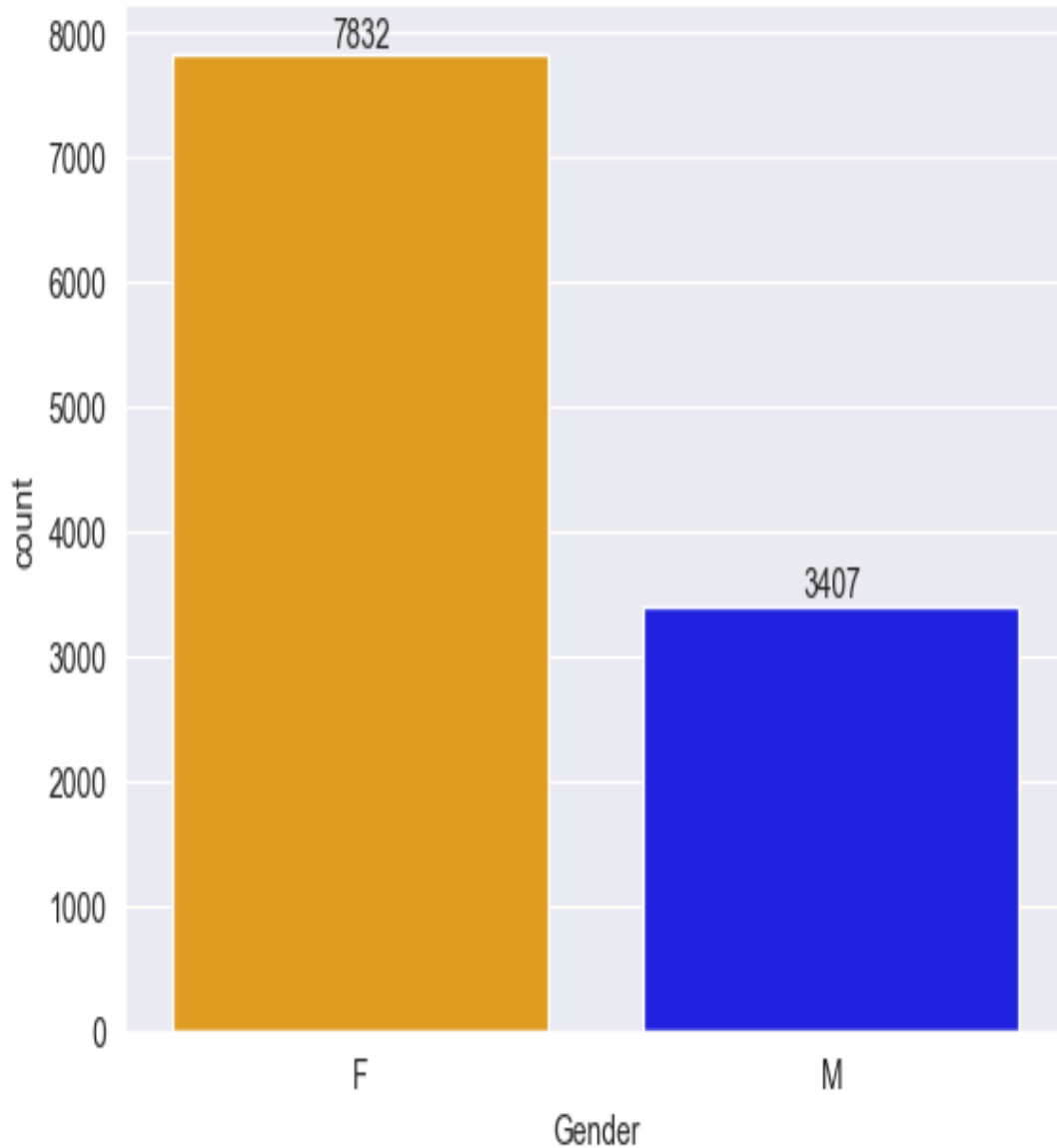
Key Insights:
- **Majority Female Buyers:**
- The analysis indicates that the majority of our customers are female, marking them as a critical market segment.
- **Higher Purchasing Power:**
- Female customers demonstrate a greater purchasing power, reflected in their overall spending across various product categories.

Visual Summary:
- This finding emphasizes the need to focus on female consumers in our marketing and sales strategies.
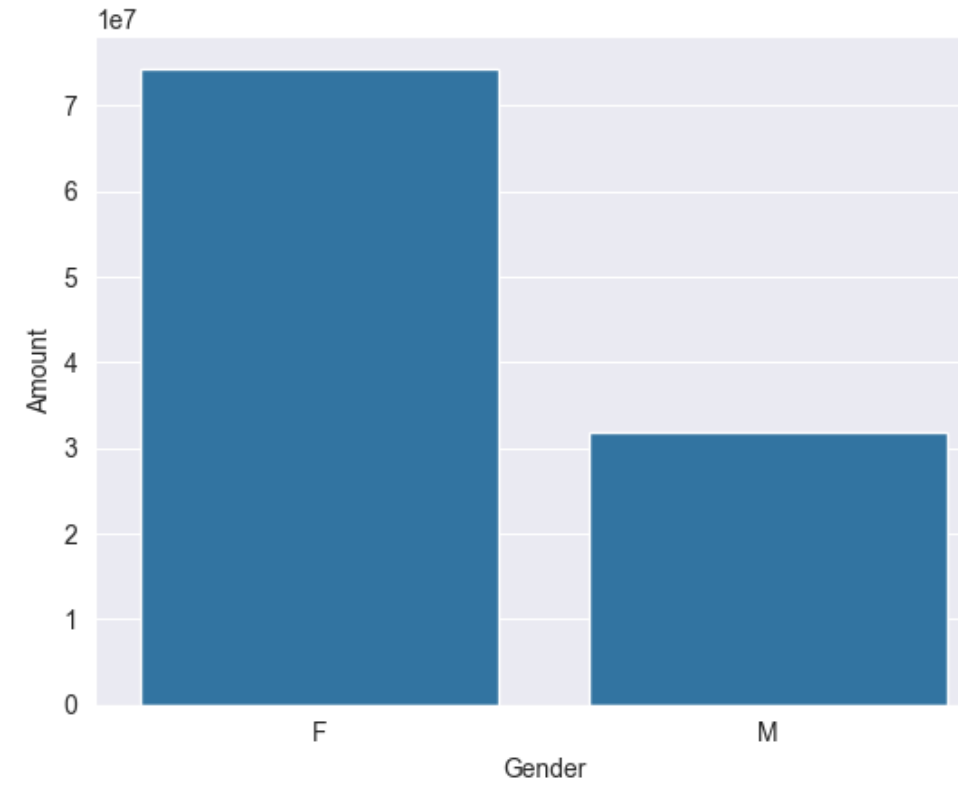
Strategic Implications:
- **Targeted Marketing:**
- Develop targeted marketing campaigns that resonate with female customers, leveraging their interests and preferences.
- **Product Offerings:**
- Enhance product offerings to cater specifically to the needs and wants of female consumers.
- **Brand Loyalty:**
- Foster brand loyalty through personalized experiences and community engagement initiatives aimed at female customers.

#Findings:

Females show higher purchasing power compared to males.

Implications:

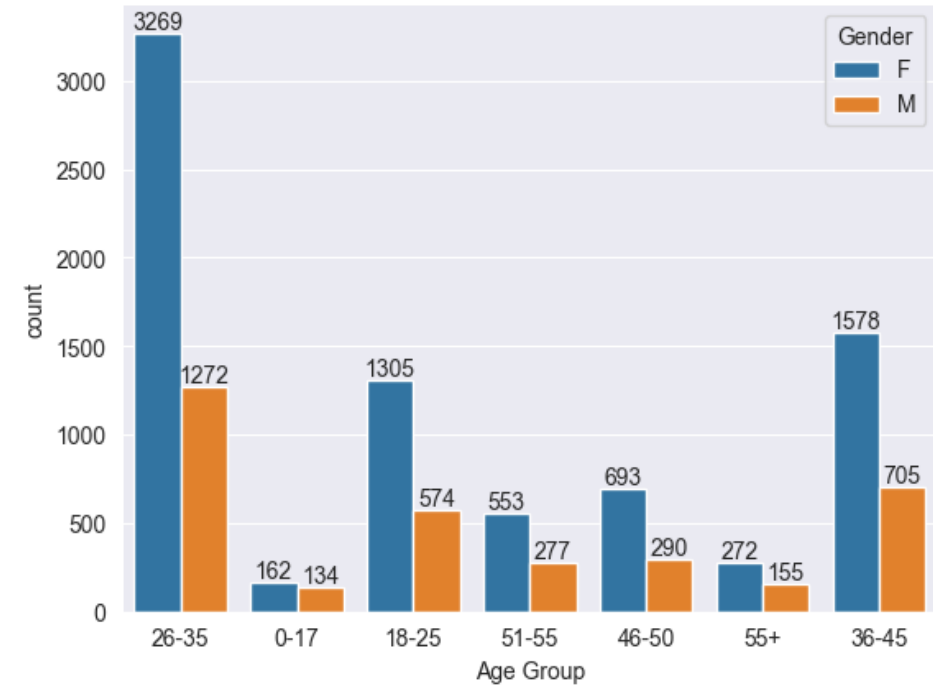• Marketing campaigns should focus on female customers to leverage their spending potential.
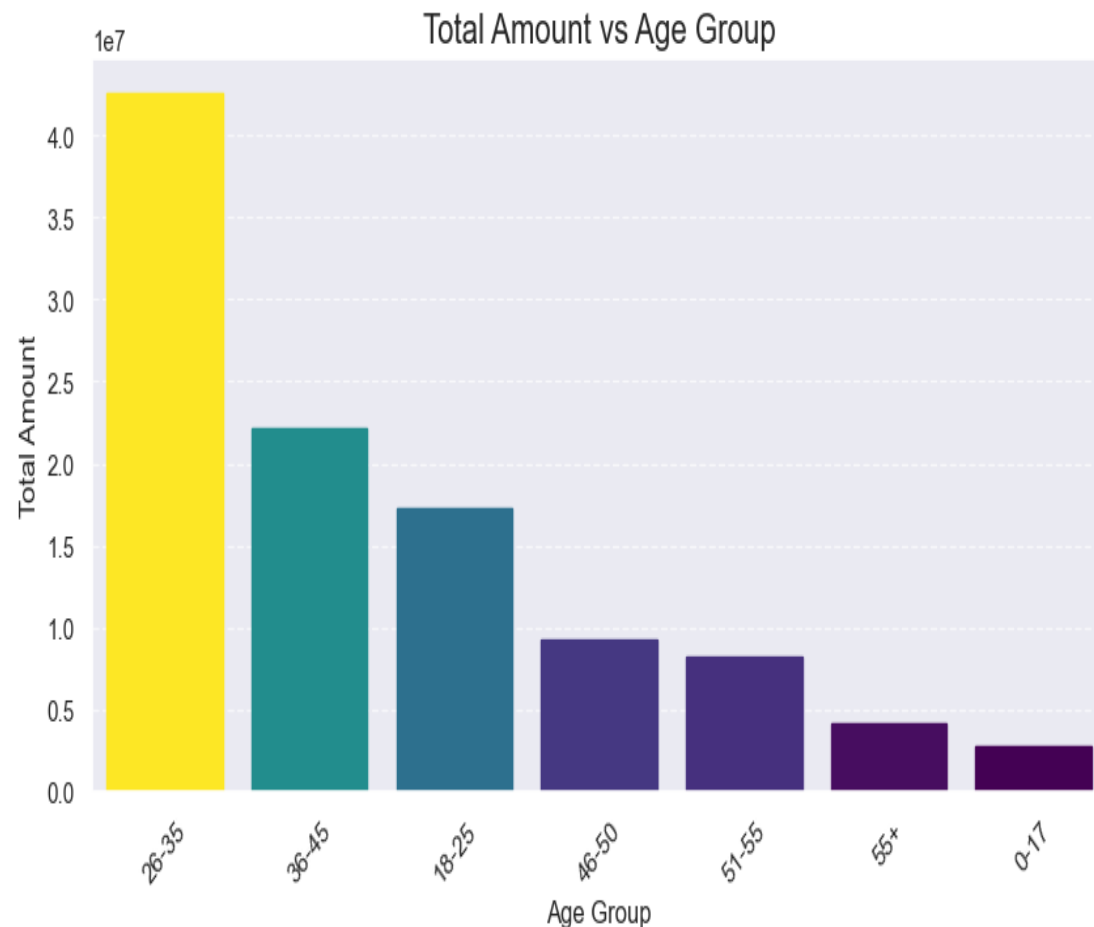
Age Group Analysis

Key Insight:

The majority of buyers fall within the **26-35 years** age group, predominantly female.

Implications:

Tailoring products and marketing strategies to this age group could enhance engagement and sales.

Key Insight:

The highest sales are generated by buyers aged **26-35 years**.

This group represents the most active consumers, contributing significantly to the total sales.

Data Insights:

A detailed analysis of purchasing behavior across different age groups.

The **26-35** age group not only shows the highest number of buyers but also the largest spending amount.

Implications:

This age group is an essential segment to focus on for future marketing efforts.

Tailored promotions and product offerings for the **26-35** age group can maximize customer engagement and sales.

Total Amount/Sales from Top 10 States
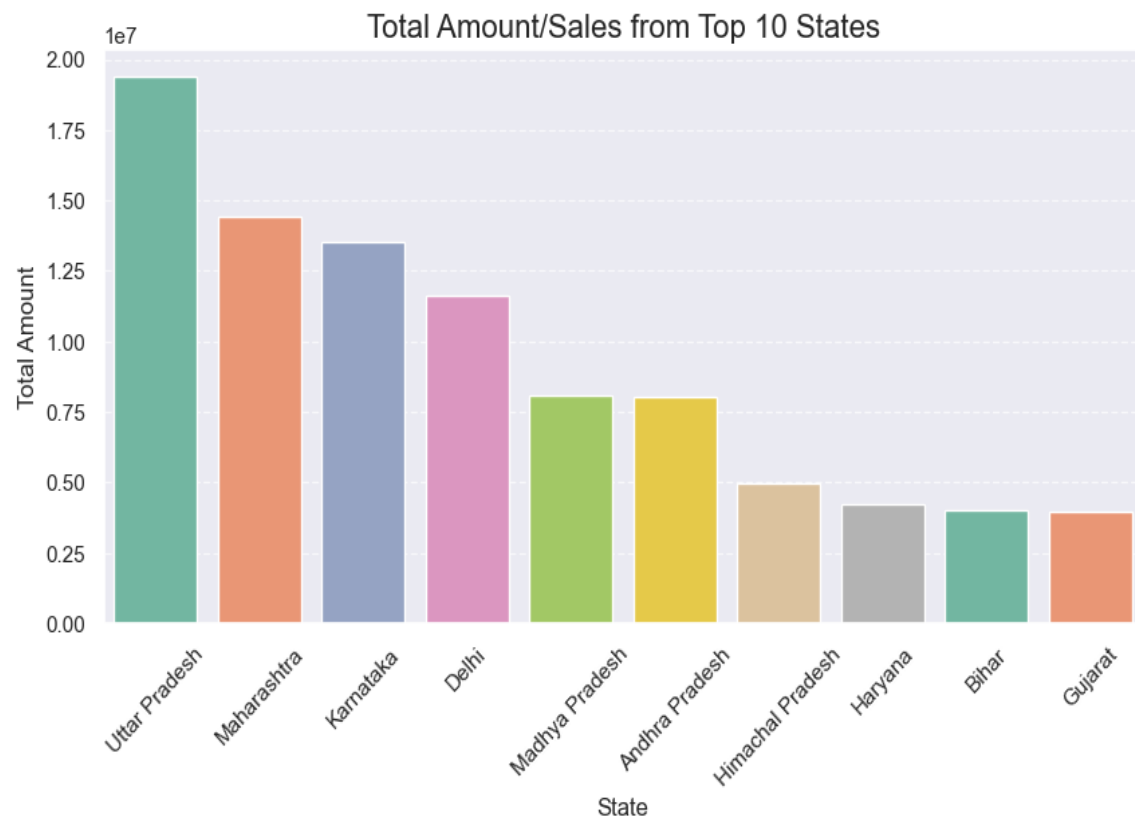
Sales and Orders Concentration by State

Key Insight:

> **Uttar Pradesh**, **Maharashtra**, and **Karnataka** stand out as the top states contributing both the highest number of orders and the largest sales amounts.

> These three states lead in both metrics, highlighting their significance as key markets for the business.

Visual Summary:

> The first bar chart showcases the **total number of orders** from each state, with Uttar Pradesh leading.

> The second bar chart highlights **total sales revenue**, with Maharashtra taking the top spot, followed by Karnataka and Uttar Pradesh.

Observations:

Uttar Pradesh has the highest number of orders, but **Maharashtra** generates the highest sales amount.

This discrepancy could suggest a higher average order value in Maharashtra compared to Uttar Pradesh.

Karnataka ranks highly in both metrics, showcasing balanced order volume and revenue contribution.

Total Sales Amount by Marital Status and Gender
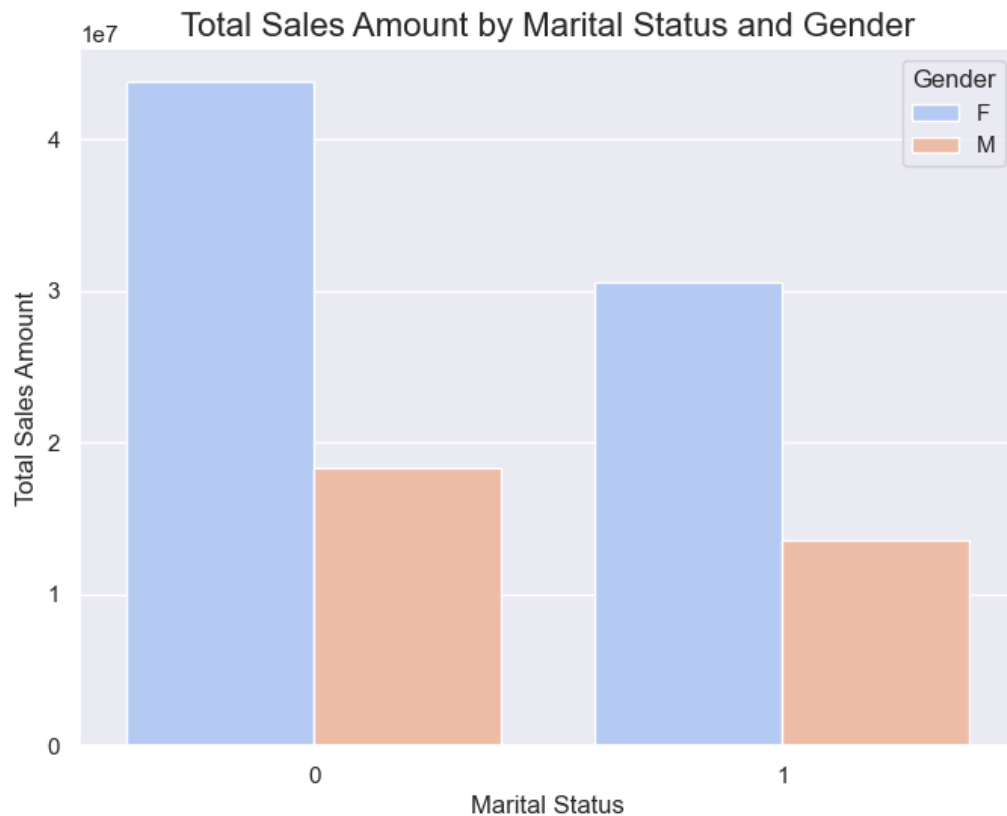
Sales Distribution Based on Marital Status
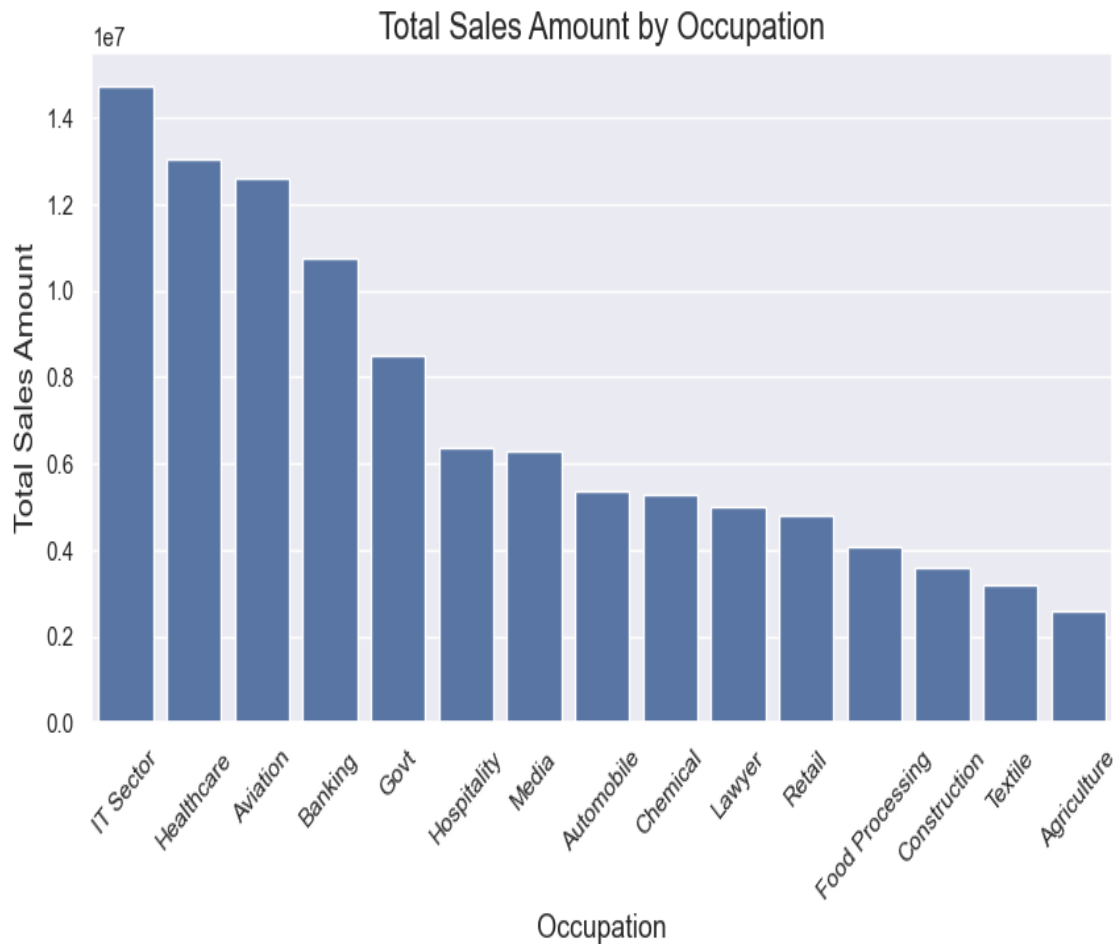
Key Insight:
- The analysis shows that **married women** are the primary buyers, contributing the most to overall sales.
- They exhibit **higher purchasing power** compared to other demographics, indicating a strong correlation between marital status and spending behavior.

Visual Summary:

- The bar chart highlights the dominance of **married women** in terms of total sales amount, significantly outperforming other customer segments.
- This trend suggests that married individuals, particularly women, tend to make higher-value purchases during the Diwali season.

Strategic Implications:
- Target **married women** with exclusive offers, bundles, and loyalty programs to increase customer retention and drive higher revenue.
- Consider promoting product categories such as **home essentials, family-focused products**, and **luxury items**, which may appeal to this segment.
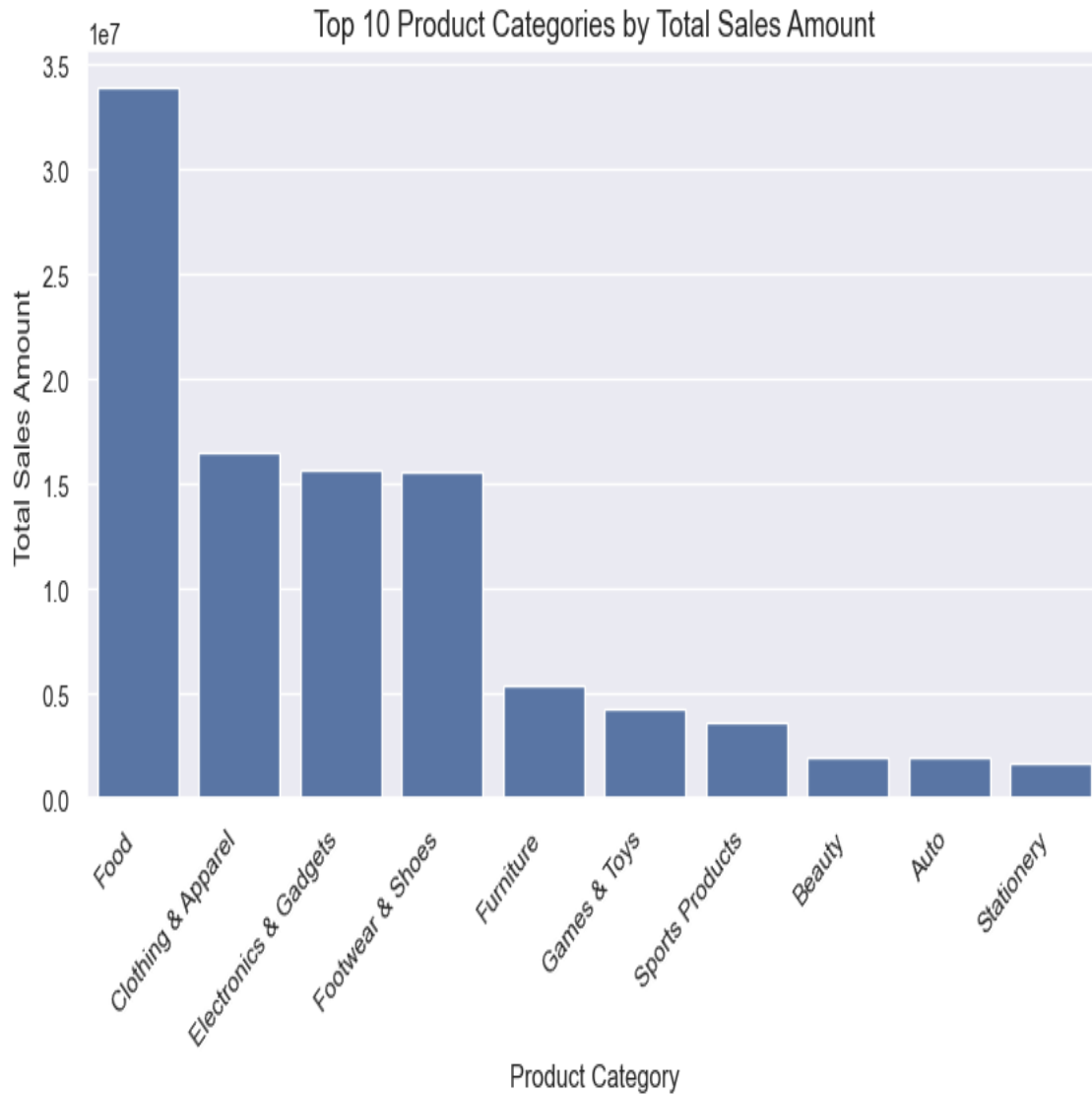
Total Sales Amount by Occupation

Total Sales Amount by Occupation

Key Insight:
- **Top Buyers**: The highest total sales are from individuals in **IT, Healthcare, and Aviation** sectors, indicating strong purchasing power among professionals in these fields.
- **Significant Contributions**: These occupations represent the most engaged buyers, potentially due to their higher disposable incomes and inclination towards online shopping.
- **Sector Opportunities**: These findings suggest sectors with higher economic stability and growth potential are more likely to drive e-commerce sales.

Strategic Implementation:
- **Targeted Marketing**: Focus advertising campaigns on professionals in IT, healthcare, and aviation to maximize conversions.
- **Personalized Offers**: Develop personalized offers or loyalty programs for individuals in these high-spending sectors.
- **Sector-Based Bundling**: Create product bundles that align with the interests and needs of these occupational groups (e.g., tech gadgets for IT, wellness products for healthcare workers).

Top 10 Product Categories by Total Sales Amount

Total Sales Amount by Occupation

Key Insight:
- **Food** emerged as the leading category in terms of sales, followed by **Clothing** and **Electronics**.
- **Home Appliances** and **Footwear** also showed significant sales, making them important categories to focus on.
- Categories like **Toys**, **Furniture**, and **Cosmetics** displayed moderate but steady sales growth.

Strategic Implementation:

•**Focus on high-demand products**: Emphasize *Food, Clothing,* and *Electronics* in future campaigns to maximize sales.

•**Seasonal promotions**: Consider introducing bundled offers or discounts on *Home Appliances* and *Footwear* to boost their sales.

•**Expand marketing**: Increase targeted marketing efforts for categories like *Toys* and *Cosmetics* to capitalize on their growing demand.

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Conclusion and Key Insights

Conclusion:

- The primary contributors to total sales are **married women**, aged **26-35 years**, from **Uttar Pradesh**, **Maharashtra**, and **Karnataka**, working in **IT**, **Healthcare**, and **Aviation**.
- Top product categories driving sales: **Food**, **Clothing**, and **Electronics**.
- Married women show the highest purchasing power.

Key Insights:

- **Top Buyer Segment**: Married women aged 26-35 dominate the customer base.
- **Geographical Strength**: The states of Uttar Pradesh, Maharashtra, and Karnataka lead in orders and total sales.
- **Product Preferences**: Most sales are in the Food, Clothing, and Electronics categories.
- **Occupation Influence**: Buyers from IT, Healthcare, and Aviation sectors have higher purchasing activity.

Recommendations and Next Steps

Suggestions & Recommendations:

- **Targeted Marketing Campaigns**:
  - Create campaigns tailored to **married women** in the 26-35 age group from **Uttar Pradesh**, **Maharashtra**, and **Karnataka**.
  - Use personalized offers for customers in **IT**, **Healthcare**, and **Aviation**.
- **Product Bundling**:
  - Bundle high-selling categories like **Food**, **Clothing**, and **Electronics** to increase average order value.
  - Introduce loyalty programs for repeat buyers in these categories.
- **Geographical Expansion**:
  - Expand marketing and distribution in the top-performing states.
  - Tailor regional promotions based on local trends and preferences.
- **Promotions for Emerging Categories**:
  - Increase promotional activities for **Home Appliances** and **Footwear**.
  - Leverage seasonal discounts to boost sales.
- **Next Steps**:
  - Implement data-driven marketing strategies based on identified customer segments and product preferences.
  - Track the impact of these campaigns on sales and adjust as needed.
  - Continue exploring customer insights to refine marketing efforts and business strategies.

Thank You & Suggestions

Thank You!

- **I appreciate your time and attention.**

- I am always open to learning and improving. **Your feedback and suggestions** would be greatly appreciated to help refine this analysis further.

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Looking forward to your insights and recommendations!