**MADHAV STORE ANALYSIS**

**Project Scope**

*The proprietor of Madhav Store has reached out with a request to collaborate on the development of a dynamic dashboard tailored to monitor and dissect their online sales activities across the diverse landscape of India. This initiative arises from the growing need to gain a comprehensive understanding of their sales performance and market trends. Recognizing the pivotal role that data-driven insights play in modern business strategies, the Madhav Store's management is keen to harness the power of data visualization to empower informed decision-making and fuel their growth trajectory.*

*To lay the foundation for this ambitious undertaking, I aim to construct a dashboard that amalgamates various key performance indicators (KPIs) derived from the online sales data. The dashboard will encapsulate a holistic view of their sales landscape, spotlighting regions of high demand, identifying top customers, and delineating peak sales periods. This endeavour aligns seamlessly with Madhav Store's commitment to leveraging technology for competitive advantage and is poised to empower them with real-time insights, aiding in effective inventory management, targeted marketing campaigns, and refined customer engagement.*

**Selection of Key Performance Indicators (KPIs):**

* **Sum of Total Amount of Sales:** This sums up all sales transactions' values, providing an overview of the revenue generated by the store.
* **Sum Of Total Profit:** This metric combines revenue and costs to show the net profit earned by the store.
* **Sum of Order Quantity:** This adds up all units or items ordered, giving insights into customer demand.
* **Sum of Average Order Value:** By summing average order values, this metric reveals customer spending patterns and informs marketing strategies.

**Selection of Charts and Visualisation Options:**

1. **Profit By Month – Stacked Column Chart:** Opted for a stacked column chart to visually portray the monthly profit distribution of the store. This choice of chart facilitates a more insightful comprehension of the store's financial performance across different months. By employing this chart type, it becomes more apparent which months yield the highest profits (November) and which exhibit comparatively lower returns/losses. This knowledge serves as a valuable compass, empowering the store to strategically allocate resources and efforts. By pinpointing peak and lean periods, the store can proactively adapt its strategies, optimizing operations and maximizing profitability. Conditional formatting was applied to enhance data interpretation, resulting in a visually enhanced representation.
2. **Top Selling Sub Categories – Stacked Bar Chart:** A stacked bar chart was chosen to visually represent the top 5 most profitable subcategories for the store. These subcategories encompass the products that yield the highest profits, thereby offering valuable insights for inventory management, potential expansion, and discount strategies. By identifying the subcategories that drive maximum profitability, the store gains a competitive edge in making informed decisions about stock levels, potential product diversification, and targeted promotional efforts. This analytical approach aligns with the store's aim to optimize its operations and cater to consumer preferences while maximizing returns.
3. **Percentage Of Total Orders – Pie Chart:** To provide a representation of the distribution of ordered categories based on total order quantity, a pie chart was selected. This visual tool effectively showcases the proportion of each category within the overall order quantity, offering an easily digestible snapshot of category popularity and consumer preferences. By utilizing a pie chart, the store gains a clear overview of the relative significance of different product categories in terms of sales volume, facilitating strategic decision-making and allocation of resources to cater to varying customer demands. This visualization aligns with the store's objective of understanding customer preferences and optimizing their product offerings accordingly.
4. **Payment Method Type – Pie Chart:** The available payment options included Cash on Delivery (COD), Unified Payment Interface (UPI), Debit Card, Credit Card, and EMI. By utilizing a pie chart, a clear visual representation was created, highlighting the distribution of customer choices among these various payment methods. The most used payment method by far was COD (44%), followed by UPI (21%).
5. **Top Revenue by States – Bar Graph:** This bar graph represents the top revenue generating states, which are Uttar Pradesh, followed by Delhi, Maharashtra, and Madhya Pradesh.
6. **Top Customers – Column Graph:** Customers with the highest number of sales done. Top 3 are Harivansh, Madhav, and Jay.

**Data Cleaning**

1. In the 'orders' table, a slight changed was mode: the alteration of the 'order date' column's data type from text to date. This transition refines the chart's presentation, shifting the focus from daily to monthly profit analysis. This adjustment considerably improves chart readability, making it easier to discern and analyse profit trends over time. This optimisation aligns with our aim to enhance data interpretation and decision-making efficiency.
2. Added a new column labelled 'Average Order Value' within the 'details' table. This addition was accomplished using a column tool and formulated by applying the equation AOV = [Amount] / [Quantity]. Subsequently, a refinement was made by adjusting the data type to whole numbers.

**Data Filters**

* **Quarter Filter:** A quarter filter was implemented, enabling the selection of specific quarters for a more focused view of the data. This filter empowers the user to zoom in on particular time segments, facilitating detailed analysis and insights.
* **States Filter:** A states filter was employed to examine data on an individual state level. This feature allows for a granular exploration of data from various states, enhancing the ability to understand regional trends and preferences.

**Suggestions**

1. **Strategic Focus on Top States:** Given that Uttar Pradesh, Delhi, Maharashtra, and Madhya Pradesh are the top-performing states, consider directing marketing efforts and inventory management strategies towards these regions. Tailoring promotions or exclusive offerings based on regional preferences could potentially drive even higher sales in these areas.
2. **Optimize Product Mix:** With Clothing being the dominant category at 62.62%, there is an opportunity to further leverage this strength. Consider expanding the range of clothing products or introducing new collections to cater to diverse consumer tastes. Additionally, while Electronics and Furniture contribute significantly, exploring ways to enhance their appeal or introducing complementary products could amplify sales in these categories.
3. **Harness the Profitable Months:** Leverage the insight that November is the most profitable month. Plan marketing campaigns, new product launches, or special promotions during this period to maximize returns. For the loss months (May, July, September, and December), further analysis of what factors might be contributing to lower sales and consider strategies is required to mitigate these challenges.
4. **Cultivate Customer Relationships:** Engage with top customers like Harivansh, Madhav, and Jay to foster loyalty and repeat business. Personalized offers, exclusive discounts, or loyalty programs could incentivize continued engagement and potentially lead to increased sales.
5. **Payment Method Diversity:** Given that Cash on Delivery and UPI are popular payment methods, ensure a seamless experience for customers using these options. Additionally, consider incentivizing Credit Card and EMI usage by offering special deals or benefits, as this could potentially increase profitability through reduced transaction fees.
6. **Optimize Top Selling Items:** Since Printers, Bookcases, Sarees, Accessories, and Tables are the top-selling items, focus on ensuring consistent availability and perhaps exploring bundling options. Analyse customer feedback and preferences to refine these products further, ensuring they continue to meet customer expectations.

**End of report**