University for the Creative Arts

BERLIN SCHOOL OF BUSINESS & INNOVATION

Essay / Assignment Title: Designing a sales dashboard in Tableau for a chosen company

Programme title: Visualization and Story Telling using Tableau

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INTRODUCTION

This Amazon sales dashboard is addressed to significant internal stakeholders: people managing sales, planning inventory, and making strategic decisions. The aim of the dashboard is to summarize the most critical sales metrics from the historical data of Amazon, provide a single platform to understand the insights in sales performance, monitor trends, and achieve customer satisfaction. Given the rapid development within the e-commerce business arena, Amazon relies on its ability to access real insights across various metrics as quickly as possible for proper informed decision-making.

The focus of the dashboard is on key KPIs relevant to and needed by various teams at Amazon. These are:

Total Sales: This basic measure describes the total revenue generated, helping stakeholders understand the trend behind the revenues that the company generates.

Average Order Value: This describes the average revenue per order, which will give insight into the customer buying habits and allow the stakeholders to grasp the efficiency or effectiveness of upselling campaigns.
Sales by Category: Good to understand top-selling product categories and those requiring further promotion or optimization. Number of Orders: The number of transactions informs teams about the placing-order trend and seasonal demand. Top 5 Products by Sales: A fast-track view of the most popular products, it allows inventory planners and marketers to address only high-demand items. Each KPI serves different purposes for different user groups. For instance, while the sales managers need to have category-based insights that drive marketing strategies, inventory planners need to have an exact number of top products to enable them to optimize their stock level and manage their supply chain efficiently. In focusing on the "Number of Orders," this dashboard enables Amazon's logistics team to show how order volume has changed over time and thus helps them to effectively allocate resources and further drive efficiency. The dashboard will make that information quite accessible and interactive, so each stakeholder, in conjunction with Amazon's strategic goals-be it to improve market penetration, rationalize logistics, or enhance customer satisfaction-can make data-driven decisions.

The main objectives of the dashboard are to enrich Amazon's general performance in terms of sales, to give real-time visibility of the sales metric, and to find growth opportunities across product categories and geographical markets.

CHAPTER ONE (the number of Chapters could be more depending on the content)

Problem Identification:

The hugely extensive and diverse sales operations of Amazon pose a raft of challenges, mainly in the consolidation and analysis of data across a raft of sales and fulfillment metrics. The dataset underpinning this dashboard includes key dimensions of Amazon sales, including:

Order Information: It covers order ID, order date, and whether it was fulfilled or not, which becomes vital in tracking transaction trends and the timeframe of fulfillment.

Product Information: SKU, style, category are some of the attributes that enable Amazon's team to view performance breakdowns by specific product type in order to derive informed inventory and marketing decisions.

Geographical Information: Ship city, state, and country pinpoint regional sales trends and allow for targeted promotions with efficient logistics planning.

Financial Indicators: Key information like the price of an item, shipping cost, and transactional value gives context about revenue generated and shipping cost implications, which is quite critical when it comes to managing profitability.

The key thrust of this project is to serve Amazon's needs in exploring sales challenges regarding customer segmentation, identification of sales trends, and the monitoring of products with high demand. These stated objectives address the needs of Amazon, enabling the sales and logistics teams to track performance metrics regularly and accurately, find opportunities for improvement, and discover growth opportunities relevant to both the operational and strategic goals.

The analytics of data, especially from business intelligence tools such as Tableau, will help Amazon's team to transform 'big' data into actionable insights. By the use of Tableau dynamic visualizations, stakeholders will be able not only to drill down into specific metrics for patterns but also to attain such detailed insight that may not be so easily realized through conventional reporting methods. For instance, inventory planners can work on maintaining optimal stock levels by tracking the Top 5 Products by Sales, while tracking the number of orders will lead logistic teams to predict peak periods and make proper resource allocations.

Data Transformation Needs: A number of transformation steps are in need prior to visualizing the data in the dashboard, which will ensure the accuracy and reliability of data.

Data Cleaning: Imputation of missing values, outliers, and format inconsistency within columns like order date, SKU, and order amount are key to ensuring dependable insights. Data filtering excludes canceled orders from critical analyses in the interests of keeping only successful transactions, which would merely keep such metrics as the total sales figure and the number of fulfilled orders accurate.

Aggregation of data: It sums up the data by product, by date, and by region, allowing sharp insights to be showcased clearly on a structured basis for visualization.

These transformation steps thereby ensure that the metrics related to sales at Amazon will be viewed by the dashboard in such a way that they become real, accessible, and indicative of present needs on which action can be taken by the company based on data-driven insights. This dashboard offers visibility into the existing business metrics and solves the problem related to disparate data, thereby driving some essential strategic objectives that Amazon must consider today in such a competitive e-commerce world.

CHAPTER TWO

Solution Finding:

For Amazon, which needs such a complete sales analytics tool, Tableau is used as the main solution for this dashboard project. Since it provides advanced visualization with ease of use and is highly interactive, this makes it very competent. Tableau will let Amazon teams draw valuable insight from disparate and complex datasets by converting raw data into an intuitive, visual format that helps the user make better decisions faster. Precisely, with regard to dynamic visualization, customization, and real-time data interaction, Tableau outshines all other business intelligence tools like Power BI. It is ideal for keeping tabs on key sales metrics and making sense of these metrics.

Data Transformation and Visualization: Tableau has all these functionalities necessary for effective data transformation, such as calculated fields, data blending, and advanced filtering options. For example, the data aggregation in Tableau will enable Amazon teams to instantly observe such summaries as "Total Sales" by region or "Top 5 Products by Sales," while the filters will provide the ability to focus their views on category, time period, or location. It is this flexibility that makes the feature so important for Amazon stakeholders, whose goals will vary with the level of detail they require. While sales managers might want an overview of the trend, inventory planners need to have detailed insights down to a product level to manage stocks more effectively.

Interactive and Usability: Tableau's interactivity is particularly helpful to Amazon's logistics and sales teams. Interacting through drill-down capabilities-seeing data in detail, such as sales performance by product category or region-allows one to gain even more insight into the detail. Furthermore, this dashboard interactivity enables filtering by date range, order status, or by the type of fulfillment, which is so crucial in real time for swift decision-making. The ease with which filters and drill-downs can be set up in Tableau means that business value will not get lost to non-technical users who must view it without requiring deep technical competencies.

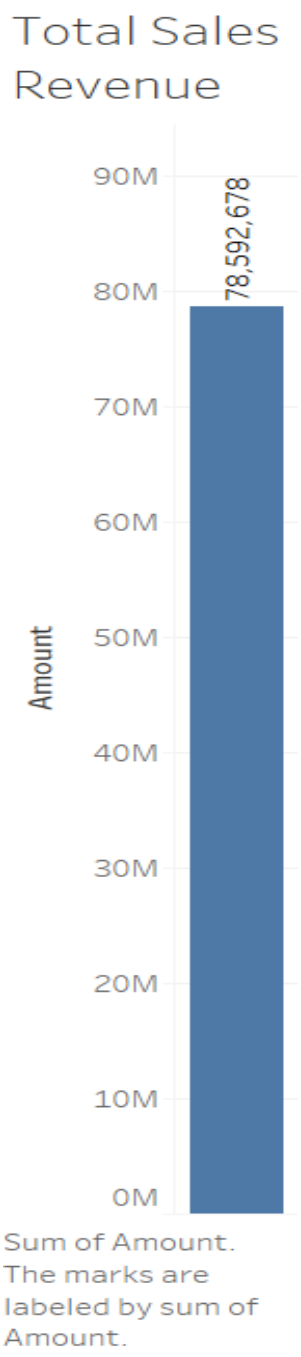
Better Analytics: The native analytics capabilities in Tableau- things like trend lines, forecasts, and clustering- on the other hand, provide Amazon teams with a more intuitive look at information. For example, if the sales department uses the functionality of trend lines and forecasts, then it will be able to understand when to expect changes in order volume due to seasonality. With this foresight, marketing could be adjusted and strategies about inventory management changed accordingly. Similarly, clustering can help identify pockets of customers. It helps Amazon target its marketing efforts more precisely.

With Tableau's range of functionalities, Amazon's dashboard integrates data from various sources into one easy-to-access real-time analytics tool that meets the business operational

objectives. The solution identifies the need for speed and insight from data, hence forming a very important tool in optimizing sales performance, efficiently managing inventories, and generally enhancing Amazon's competitive advantage in e-commerce.

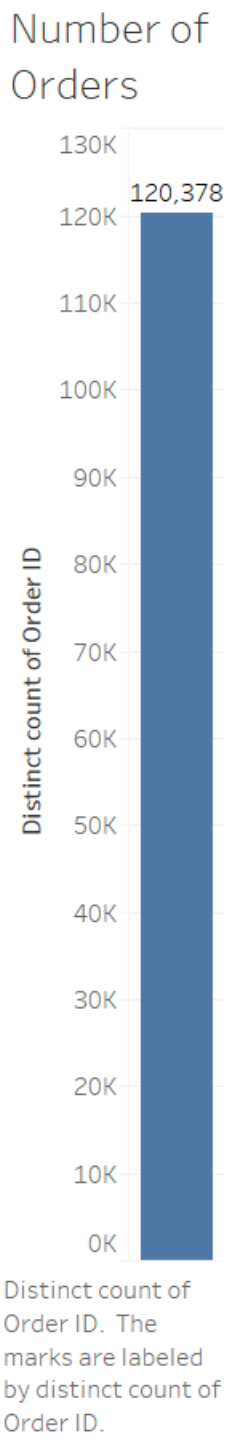
4. Dashboard Design:

1. Total Sales Revenue:



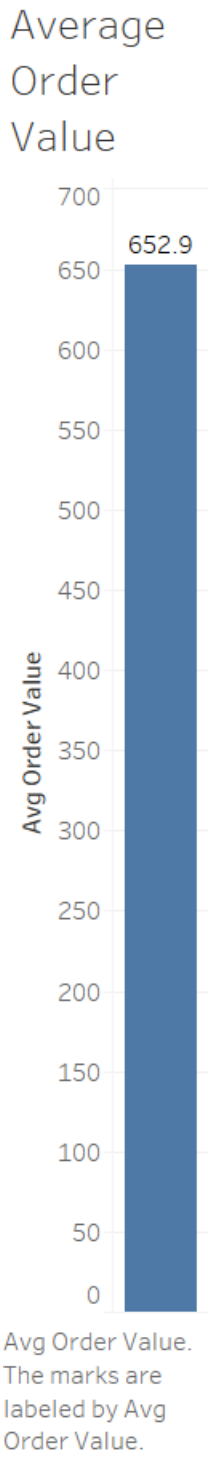
- Visualization Type: The "Total Sales Revenue" KPI is visualized as one big bar chart.
- Justification: This option gives the total revenue clear and free of clutter, hence being ideal for such an important KPI. A single wide bar assists the view in being able to perceive the revenue quantity with ease since its length relates to the total revenue, thereby helping interpret it fast.
- Advantages and Limitations:
- Advantages: The simplicity in this bar chart is its strength. It does not overwhelm the users with extra information. Hence, it concentrates on a key figure in sales performance and therefore is highly readable, easy to understand at one glance.
- Limitations: It does not give any breakdowns by categories or time periods, which could be useful in analyzing trends or even understanding seasonality. Additional charts and breakdowns might be needed for users to get a better understanding.

2. Number of Orders:



- Visualization Type: The KPI of "Total Sales Revenue" is visualized as one big bar chart.
- Justification: This option gives the total revenue clear and free of clutter, hence being ideal for such an important KPI. A single wide bar assists the view in being able to perceive the revenue quantity with ease since its length relates to the total revenue, hence assisting in interpreting it fast.
- Advantages and Limitations:
- Pros: the simplicity in this bar chart is its strength; it doesn't overload users with supplementary information. Hence, it spotlights a key figure in sales performance and therefore is highly readable and easy to understand at one glance.
- Limitations: It does not give any breakdowns by categories or time periods that could be useful in analyzing trends or even understanding seasonality. A few more charts and breakdowns may be required for the user to reach a better understanding.

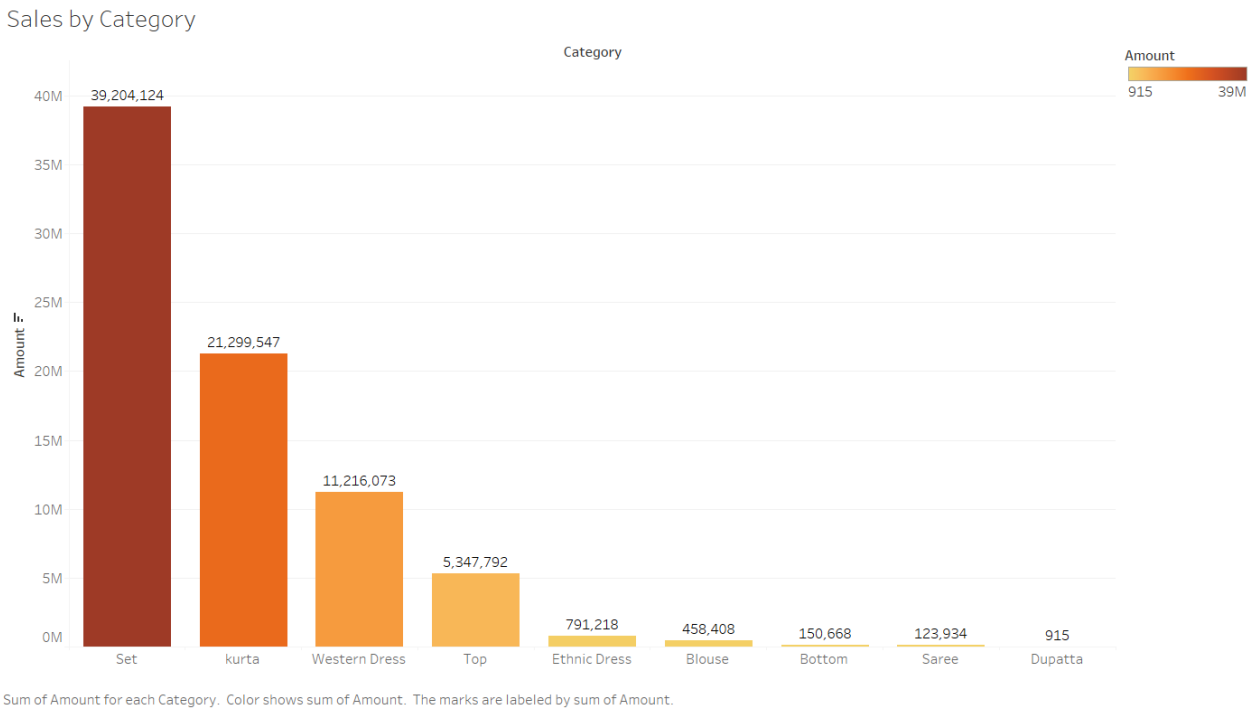
3. Average Order Value:



Avg Order Value. The marks are labeled by Avg Order Value.

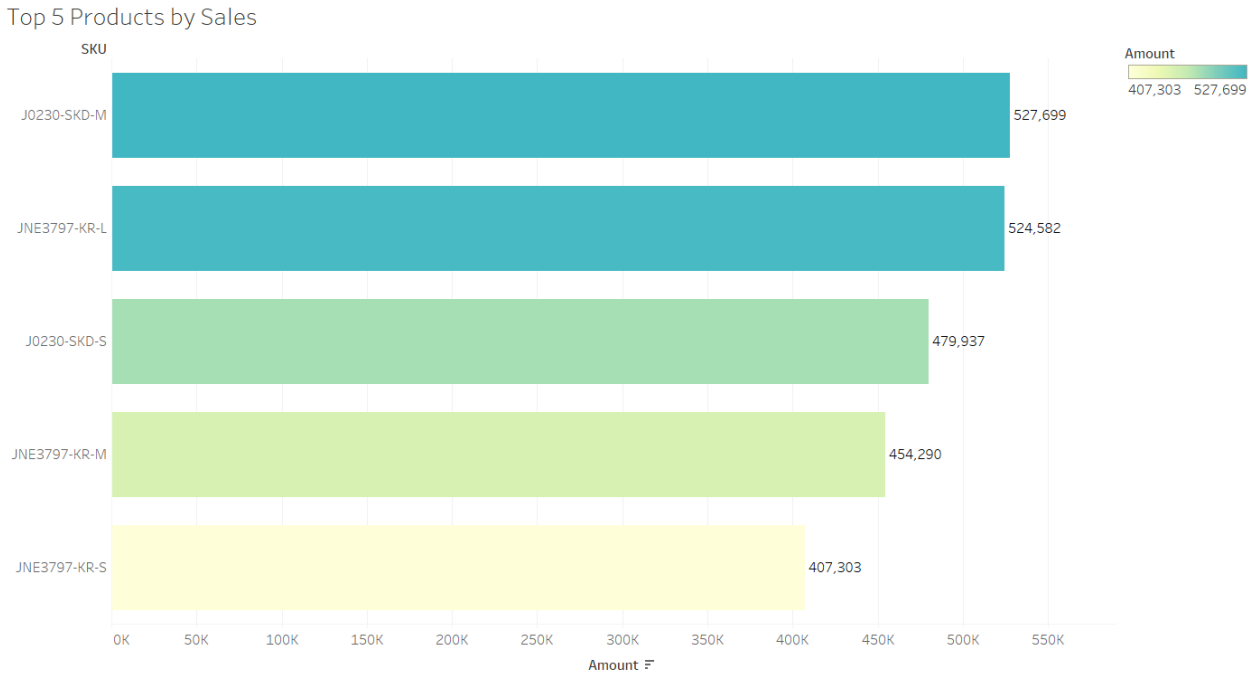
- Type of Visualization: This is a bar chart that represents the average order value.
- Justification: In this case, the bar chart is effective because it allows viewers to quickly see the average order size. That metric forms the crux of understanding customer buying behavior and the quality of sales.
- Advantages and Limitations:
- Advantages: Average order value is presented in a simple manner, so that one could judge just how much the customer spends per order. The simplicity contributes to clarity.
- Limitations: This one visualization alone cannot show how that average ranks against products or category. The user might have to resort to other KPIs to identify whether some product lines have average order values greater or lesser than that.

4. **Sales by Category:**



- Visualization Type: Horizontal bar chart, segmented by category.
- Justification: The horizontal bar chart works great for comparisons across categories. Each bar's length is drawn based on the revenue of each product category, which includes but is not limited to Set, Kurta, and Western Dress. This layout allows the user to instantly view how each category performs in comparison with the others.
- Advantages and Limitations:
- Advantages: The horizontal orientation is good for comparing across categories, and the color coding is highly differentiable. It allows the user to immediately discern which categories are the biggest contributors-like "Set"-and which have relatively lower contributions, such as "Dupatta".
- Limitations: Too many categories make a chart appear untidy and/or unreadable; in categories where values are relatively similar, visual contrast between these categories may be less apparent and, therefore, misinterpreted. To solve this, one can tidy up or summarize minor categories for improved readability.

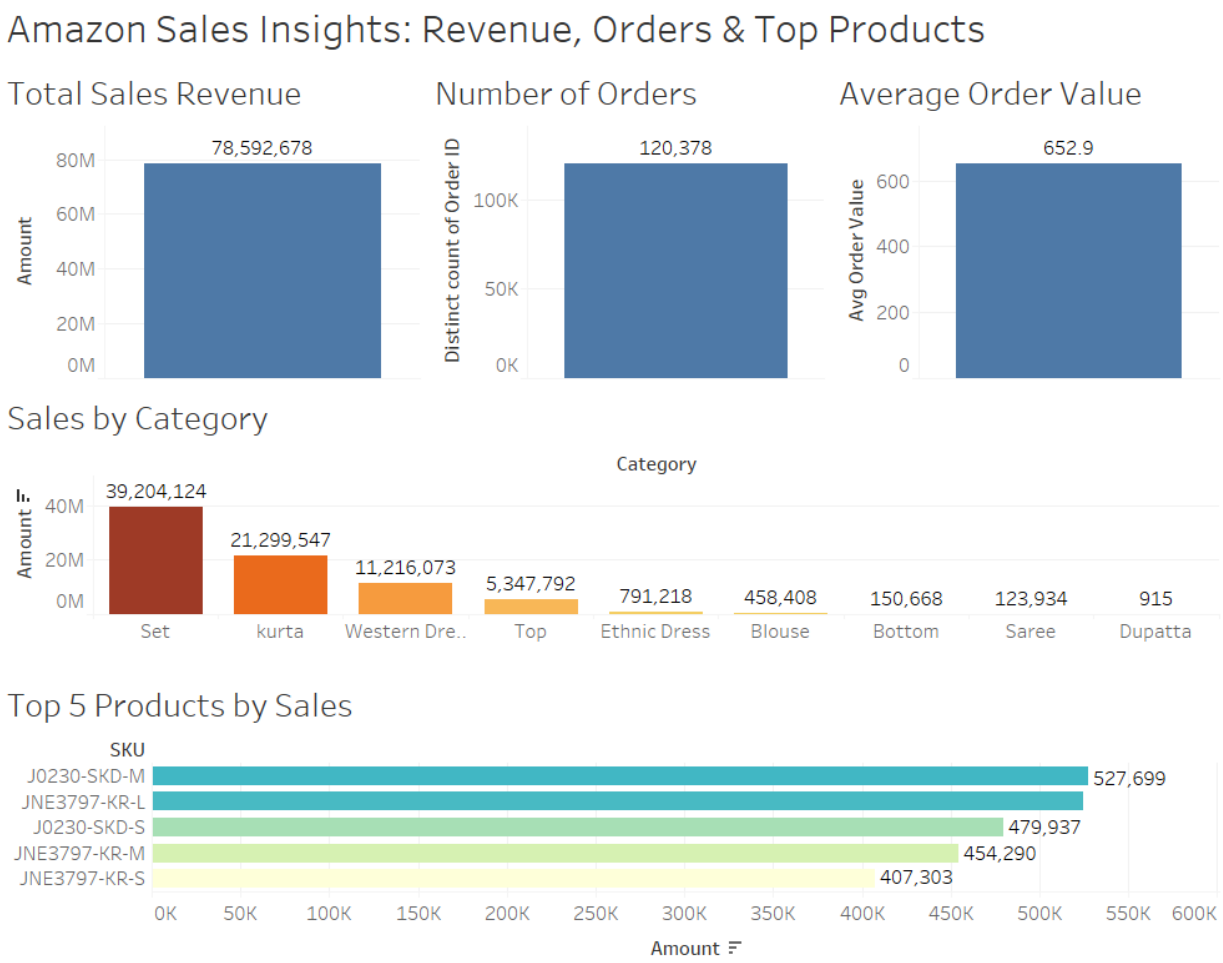
5. Top 5 Products by Sales:



Sum of Amount for each SKU. Color shows sum of Amount. The view is filtered on SKU, which keeps J0230-SKD-M, J0230-SKD-S, JNE3797-KR-L, JNE3797-KR-M and JNE3797-KR-S.

- Visualization Type: Another horizontal bar chart, sorted by best-selling products (SKUs).
- Justification: This is a grouped chart showing the particular products wherein the highest sales occur. By having horizontal bars in a descending order, it helps the users easily view which SKUs are hottest.
- Advantages and Limitations:
- Advantages: The chart is clearly ordered, so it is easy to compare between top-selling products; provides a product-level performance that will complement category-wide insights.
- Limitations with this chart are that, by highlighting only the top five products, it may leave out relevant data about other important items that just happened to be a little lower in ranking. This is a limitation because it does not feature interactive filters that would enable one to look further than the top five products, if needed.

Dashboard Schematic and Layout:



Top to bottom layout guides the viewer's focus from high-level metrics to specific details.

- Top Row - Overall KPIs

  Positioning - Three key KPIs occupy top positions for high-level overview on instant glance: Total Sales Revenue, No. of Orders, Average Order Value. These were highlighted since they represented the most basic level of sales performance.

  Flow: The view starts with these overall metrics, so the user is being primed with the broader context first; they see the details afterwards. This is appropriate, as it is dealing with the high-level figures, usually of universal interest.

- Middle Section Sales by Category

  Positioning: This is centrally placed, with a Sales by Category bar chart on revenue by product category. This goes here to provide the user with a segmented view-once they've absorbed the general KPIs-to show them what drives the high-level revenue and order metrics.

Flow: This would come after the general KPIs, whereby one can pick up category-specific insights that will be useful in decision-making regarding inventory or marketing efforts for certain categories.

- Bottom Section (Top 5 Products by Sales):

  Positioning: This would sit at the bottom. The Top 5 Products chart represents individual high-performing products. This position will allow users to drill down to the most granular level of product performance after looking at higher levels of metrics.

  Flow: It's a natural progression from high-level to detailed analysis, helpful for users who require insight down to the SKU level so they can drive strategic stocking or sales promotions.

Design Elements and Aesthetic Choices

- Color Scheme:

  A balanced color scheme, using a different color for each product category, gives clear differentiation without visual overload. The use of contrasting colors, especially in the "Sales by Category" section, promotes quick associations to be made visually and tells the user which of these categories are performing the best.

- Fonts and Typography:

  Simple sans-serif fonts are used in the dashboard, which are even easier to read on digital screens. The font sizes vary: larger for titles and headers, smaller but readable for figures, which makes the dashboard readable without visual strain.

- Visual Minimalism:

  The dashboard does not use decorative elements at all. With this approach, the user's focus stays with KPIs only; there will be minimum or no distraction from non-essential components, hence clarity in a functional way for the dashboard.

5. Discussion

Solution Evaluation:
This dashboard presents key insights about sales to business stakeholders in a much more accessible and insightful format. Each of these visualizations is explained on its own: from overall revenue to the breakdown of sales across categories to every individual product performance. Such clarity makes it so easy for the decision-maker to grasp the key insights without having to possess high levels of data literacy. The top-to-bottom flow of the layout-from high-level KPIs to detailed breakdown-provides a natural structure.

However, there do exist some limitations with regard to the dashboard. First, being static, it provides the possibility that users will have to change data themselves; hence, they cannot get insights from this in real time. Secondly, the unavailability of interactivity-like date filtering, region, or demographics of a customer-limits the depth of analytics. In this respect, users who want custom analytics for specific segments get barred by the current state of this dashboard.

Suggested Areas of Improvement
Interactivity:

Adding date range filters, filters for different regions, and customer demographics would allow users to tailor the views to suit their needs, making this dashboard much more useful for a wide range of business needs.
Real-time Updates:

Tying the dashboard to a live feed data source, such as a database or API, would automatically refresh the data. This real-time capability would contribute to better decision-making, especially during peak seasons of sales or promotional events.
Predictive Analytics:

Integration with trend analysis or predictive models could be made to predict what the sales performance would look like in the future. For instance, the integration of machine learning algorithms that could forecast demand well in advance will be proactive and of much competitive advantage in managing the inventory.
Additional Segmentation:

If segmented further, breaking it down by region or customer demographics helps target marketing strategies and product distribution accordingly. A segment might provide insight into which region or type of customer is driving the sales increase.

Conclusion:

Overview of Key Insights

This dashboard, therefore, provides a general analysis of the sales pattern amongst categories and individual products. This dashboard helps in strategic decision-making through visualization of the KPIs in an organized, easy-to-view format, thus helping the stakeholder identify what drives the sales for necessary adjustments quickly. The insights derived here become so important for inventory management, planning of promotions, and making data-influenced adjustments toward the sales strategy.

Future Implications

As the art of data analytics evolves, future iterations of this dashboard could further move into advanced analytics, including real-time data feeds and predictive modeling, thus making the dashboards more useful for timely decision-making. Further, integrations of external market data that empower the business toward proactive responses to changes in consumer demand and competitive dynamics could also enrich the insights further.

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