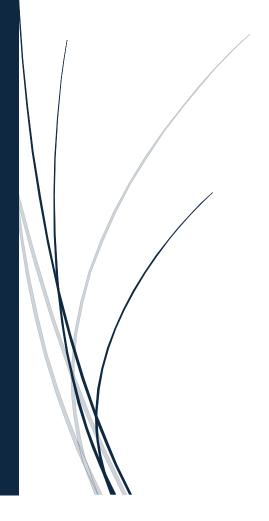# STRATEGIC DECISION-MAKING USING POWER-BI

PRE-REPORT SUBMISSION

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Introduction

The e-commerce industry has revolutionized the way businesses operate, offering unparalleled convenience to customers and vast opportunities for companies to expand their reach. However, alongside this growth, organizations face significant challenges in optimizing sales performance, meeting customer expectations, and ensuring operational efficiency. With the ever-increasing volume of transactional and logistical data, the ability to derive actionable insights has become a critical driver for success.

This project aims to leverage data analytics and visualization to address key business questions surrounding sales trends, delivery performance, and order cancellations. Using tools like Microsoft Excel for data cleaning and Power BI for creating interactive dashboards, this analysis seeks to uncover patterns, identify bottlenecks, and provide strategic recommendations. By focusing on metrics such as revenue distribution, on-time delivery rates, and fulfilment efficiency, the project aspires to enhance customer satisfaction and drive informed decision-making.

The ultimate goal of this initiative is to empower stakeholders with insights that improve operational effectiveness, reduce cancellations, and optimize sales strategies. This report outlines the methodology, tools, and anticipated outcomes of the analysis, forming the foundation for crafting a comprehensive dashboard to support data-driven strategies.

Problem Statement

- **Purpose**: Define the business challenge or key question driving the project.

- **Details**:

  o Highlight why this analysis is important.

  o Specify the pain points being addressed (e.g., low customer satisfaction, high cancellation rates, regional performance gaps).

  o Example:

"The goal is to analyse regional sales performance, delivery efficiency, and order cancellations to identify trends and recommend strategies for improving operational efficiency and customer satisfaction."

Data Requirement

- **Purpose**: Identify the data fields required for analysis.

- **Details**:

  o List critical columns, ensuring they align with the objectives.

  o Mention the types of data (e.g., numerical, categorical, or date-based).

  o Specify additional information, such as dimensions (e.g., regions) or measures (e.g., revenue).

  o Example:

    ▪ Order ID: Unique identifier for transactions.

    ▪ Date: Timestamp for sales tracking.

    ▪ Status: Shipped, cancelled, pending.

    ▪ Amount: Total value of the order.

    ▪ Category: Product type.

Data Collection

- **Purpose**: Explain the sources and methods used to gather data.

- **Details**:

  o Name data sources (e.g., Kaggle, internal sales systems, external reports).

  o Specify how data will be obtained and any integration tools or APIs used.

  o Example:

"Data is collected from the company's backend order management system, delivery service providers, and promotional campaign reports. External data on regional market trends is also included."

Data Validation

- **Purpose**: Ensure the data's accuracy, consistency, and reliability.

- **Details**:

  o Check for missing values in key fields and address them.

  o Validate the consistency of entries (e.g., standardized state names).

  o Identify and remove duplicates to avoid skewing results.

  o Example Steps:

  ▪ Check if Amount values are all positive.

  ▪ Verify the Status column contains valid entries (e.g., "Shipped", "Cancelled").

  ▪ Cross-check shipping postal codes for mismatches.

Data Cleaning

- **Purpose**: Make the dataset ready for analysis by removing errors or inconsistencies.

- **Details**:

  o **Handle Missing Data**: Use default values or impute missing entries.

- o **Correct Data Formats**: Convert dates to a standard format (e.g., YYYY-MM-DD).

- o **Filter Outliers**: Remove transactions with unreasonable values, such as negative quantities.

- o **Consolidate Categories**: Merge similar values (e.g., "Kurta Set" and "Set").

- o Example:

"Missing amounts are replaced with 0, and redundant columns like promotion-ids are removed to streamline the dataset."

Tools

- **Purpose**: List the tools used for data analysis and visualization.

- **Details**:

  - o Mention preprocessing tools (e.g., Excel).

  - o Highlight visualization platforms (e.g., Power BI).

  - o Example:

    - ▪ **Excel**: Data cleaning and validation.

    - ▪ **Power BI**: Interactive dashboards and reporting.

Dashboard Design

- **Purpose**: Define how the data will be visualized to derive actionable insights.

- **Details**:

  o Describe each chart and its purpose.

  o Link visuals to business objectives (e.g., tracking cancellations, identifying revenue trends).

  o Example Visuals:

    1. **Sales Trends**: Line chart showing monthly revenue.

    2. **Order Status**: Pie chart of order statuses (shipped, cancelled, etc.).

    3. **Regional Analysis**: Map visualizing sales distribution by state.

    4. **Fulfilment Efficiency**: Stacked bar chart comparing fulfilment methods.

    5. **Top Products**: Bar chart highlighting best-selling categories.

Storytelling

- **Purpose**: Turn data into insights and create a compelling narrative for decision-makers.

- **Details**:

  o **Introduction**: Restate the project's goal and the analysis approach.

  o **Challenges Identified**: Highlight patterns or gaps (e.g., delays in specific regions).

  o **Key Insights**:

    ▪ Which categories or regions are most profitable?

    ▪ Where are cancellations highest, and why?

Recommendations:

- Propose actionable steps based on findings.

- Example: Focus on improving expedited shipping in high-demand Tier 2 cities to reduce cancellations and enhance satisfaction.