**Enhancing Eco-Friendly Product Adoption in Urban Markets Through Data Insights**

A retail company specializing in eco-friendly products aims to increase its adoption among urban customers. Despite the rising trend of sustainability, sales remain stagnant. The objective is to create a Power BI report that explores customer preferences, sales performance, and regional trends to identify opportunities for growth in the eco-friendly product segment.

**Step-by-Step Process for Power BI Report:**

**1. Problem Statement**

Explore the challenges of promoting eco-friendly products in urban markets, such as:

* Understanding customer preferences for sustainability.
* Identifying the best-performing products and marketing strategies.
* Analysing geographic trends to target eco-conscious regions.

**2. Data Requirements**

Key data points include:

* Sales transactions (Order ID, Product, Category, Revenue, Date, and Payment Method).
* Customer demographics (Age, Gender, Location, Income Level, Preferences for eco-friendly options).
* Marketing campaign data (Campaign ID, Channel, Cost, Reach, Conversions).
* Product details (SKU, Material Type, Carbon Footprint Rating, Cost, Selling Price).
* Feedback data (Customer Reviews, Ratings, Sentiments).

**3. Data Collection**

* **Internal Databases**: Extract sales, marketing, and customer data.
* **Customer Surveys**: Collect preferences for eco-friendly products.
* **Social Media Data**: Analyze trends in eco-friendly conversations.
* **Third-Party Reports**: Benchmark industry trends for sustainable products.

**4. Data Validation**

* Cross-check sales data against inventory records for accuracy.
* Validate customer demographics with surveys or external datasets.
* Ensure campaign metrics align with defined KPIs.
* Standardize data formats for dates, currencies, and categorical variables.

**5. Data Cleaning**

* Fill missing demographics using mode or median imputation.
* Remove duplicate records and inconsistent product naming.
* Normalize ratings and sentiment scores to a common scale.
* Address outliers in campaign data (e.g., anomalous conversion rates).

**6. Tools**

* **Power BI**: For advanced data visualization.
* **Python/Pandas**: For preprocessing and sentiment analysis of reviews.
* **SQL**: For querying and transforming large datasets.
* **Excel**: For quick manual data checks.

**7. Dashboard Development in Power BI**

**Dashboard Components:**

* **Adoption Metrics**: KPI cards for total sales, customer count, and eco-friendly product share.
* **Customer Preferences**: A clustered bar chart comparing eco-friendly vs. non-eco-friendly purchases.
* **Sales Trends**: A line chart showing monthly sales of sustainable products.
* **Marketing ROI**: A table summarizing campaign performance (cost, reach, and conversion rates).
* **Geographic Insights**: A heatmap highlighting cities with high eco-conscious purchases.
* **Customer Feedback**: A word cloud or sentiment score chart for product reviews.

**8. Storytelling**

1. **Set the Scene**:

* Showcase the growing interest in sustainability but highlight the gap in sales performance.

1. **Dive into Insights**:

* Present customer preferences for eco-friendly products, identifying strong demographics.
* Analyse top-performing regions and highlight areas for marketing focus.

1. **Reveal Challenges**:

* Address barriers like high pricing or low customer awareness.

1. **Actionable Recommendations**:

* Offer localized promotions in eco-conscious regions.
* Adjust pricing or create bundled offers for affordability.
* Invest in educating customers through targeted campaigns.