Power BI Case Study: Amazon Product Performance Analysis

Business Context

Amazon is a global e-commerce leader, offering millions of products across various categories. To maintain competitiveness, the company must continuously optimize pricing, product selection, and customer satisfaction.

Your team has been provided with a dataset containing **1,000+ Amazon products**, including:

- Pricing details (actual price, discounted price, discount percentage)
- Customer ratings and reviews
- Product categories
- User engagement metrics

Business Problem

Amazon wants to leverage this data to:

1. Identify top-performing products to prioritize in marketing campaigns.
2. Understand the relationship between pricing and customer satisfaction.
3. Determine which product categories are most successful and why.
4. Assess customer engagement to improve product visibility and sales.

Key Business Questions

1. Product Performance

- Which products have the highest customer ratings?
- Are higher-rated products more expensive, or do discounts influence ratings?
- Do certain product categories consistently receive better ratings?

2. Pricing Strategy

- What is the relationship between **discount percentage** and **rating count**?
- Do products with deeper discounts receive more reviews (indicating higher sales volume)?
- Are customers more satisfied with moderately discounted products vs. heavily discounted ones?

3. Category Analysis

- Which **product categories** have the highest average ratings?
- Which categories have the most customer reviews (indicating popularity)?
- Are there categories with high ratings but low engagement (potential untapped opportunities)?

4. Customer Engagement & Sentiment *(Updated)*

- Which users are the most active in leaving reviews (i.e., top reviewers)?
- Is there any relationship between discounted price and the number of reviews a product gets?
- Do products with more reviews tend to have higher or lower average ratings?
- What common keywords appear in **positive vs. negative reviews**?

5. Additional Insights (Student-Discovered)

- Identify **two new insights** not covered above that could help Amazon improve sales or customer satisfaction.

Expected Deliverables

Interactive Power BI Dashboard

- Visualizations that answer each business question.
- Filters to allow dynamic exploration (e.g., by category, price range).
- Clear KPIs (e.g., average rating, discount impact, review trends).

Presentation (10-12 Slides)

- **Introduction**: Business context & objectives.
- **Methodology**: How data was cleaned & analyzed.
- **Findings**: Key insights per business question (with visuals).
- **Recommendations**: Data-backed strategies for Amazon.
- **Limitations**: Any constraints in the dataset.

Success Criteria

Your analysis will be evaluated on:
- ✔ **Depth of Insights** – Did you uncover meaningful trends?
- ✔ **Data Visualization** – Are charts clear, interactive, and well-labeled?
- ✔ **Business Impact** – Do recommendations align with the findings?
- ✔ **Originality** – Did you discover unique insights beyond the given questions?

Next Steps

- Begin by exploring the dataset in Power BI.
- Clean and transform data as needed (e.g., standardize pricing, handle missing values).
- Design dashboards that tell a compelling story.
- Prepare a concise, professional presentation.

Timeframe: 10 – 12 days (Deadline: 22nd April, 2025)