Report Documentation of Sales Analysis of Electronic Products from Amazon and Newegg

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1. Business Problem and Motivation

The electronics market is highly competitive, with thousands of products and brands sold online. This project aims to analyze and compare electronic product sales from two major online platforms: Amazon and Newegg. We want to provide insights into sales trends, product performance, pricing strategies, and customer preferences across these platforms. This analysis will help businesses and retailers understand how different platforms influence sales and which factors drive consumer purchasing decisions in the electronics market.

The goal is to answer questions like:

- How do prices vary by brand and category?
- Which brands dominate in product offerings?

The final dashboard will help businesses make informed decisions about pricing, product strategy, and inventory management.

2. Description of Datasets and Cleaning Process

Dataset 1: Amazon Electronics Sales

A product dataset from Amazon, including:

➔ item_id, category, brand, product_name, price, rating, year, user_id, timestamp, user_attr

Cleaning steps: Dropped rows with missing prices, Standardized brand names, Removed duplicates with Power Query.

Dataset 2: Newegg Products (Scraped)

Data scraped using Selenium from Newegg's categories: laptops, headphones, cameras, etc. Columns:

➔ Category, Brand, Product Name, Full Title, Price, Shipping

Cleaning steps: Dropped rows with missing/invalid prices, Cleaned price formatting, Split product name into brand, model, specs, Labeled product categories with Power Query.

Insights and Hypotheses Results

Hypothesis 1:

Higher-priced products have lower sales volume but generate higher average revenue per sale.

Insights:

- The analysis confirmed that higher-priced products (especially Premium ones, priced above 300) tend to sell less frequently.
- However, despite the lower volume, these products contributed significantly to total revenue, particularly on Amazon.
- The DAX KPI measure "% Premium Products" showed that the premium segment accounts for a notable share of income on both platforms.

Conclusion: Hypothesis confirmed.

Hypothesis 2:

Certain brands perform consistently better on one platform compared to the other, regardless of price.

Insights:

- Brand comparison (using DAX category-based ranking) revealed that certain brands such as ASUS and Samsung performed better in terms of sales volume on Newegg.
- On the other hand, brands like Sony and Apple achieved higher customer ratings and sales on Amazon.
- This discrepancy may be explained by platform-specific audience preferences and brand-level marketing strategies.

Conclusion: Hypothesis confirmed.

Additional Observations:

- The "Laptop" category showed the most consistent sales volume across both platforms.
- Product and time hierarchies helped identify seasonal trends—for example, a noticeable spike during holiday months.
- Conditional formatting (gradient based on total price) clearly highlighted the most profitable categories and brands.

Final conclusion

This analysis provided clear insights into how electronic products perform across Amazon and Newegg. We found that premium products, though sold less often, contribute significantly to total revenue—especially on Amazon. Brand performance also varies by platform, with some brands like ASUS performing better on Newegg, while Apple and Sony perform better on Amazon.

The final dashboard helps businesses:

- Compare platform performance,
- Identify top brands and categories,
- Adjust pricing and product strategies.

Overall, this project supports data-driven decisions for improving sales and competitiveness in the electronics market.