**Amazon Products Case Study**

**Analysis & Dashboard Report**

**Dataset Summary:** Product listings with fields such as product category levels, prices (discounted & actual), ratings, reviews, revenue, and score metrics.

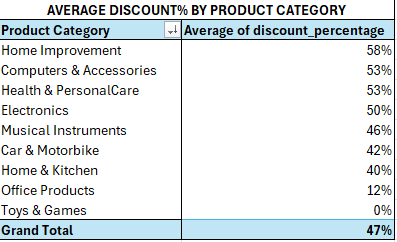
**Analysis Task**

**Key Tasks and Insights**

**1. Average Discount Percentage by Product Category**

Analysing the average discount per category helps understand:

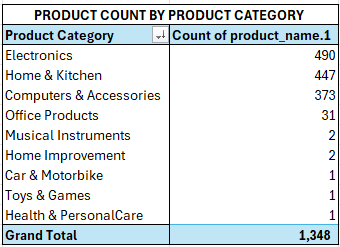
* Which product types receive the most discounts.
* Potential markdown strategies and pricing inefficiencies.
* Which also show that Home Improvement category has the highest average discount percentage and Toy and Games have 0%.



**2. Number of Products Listed Under Each Category**

This provides a clear view of category density and diversity.

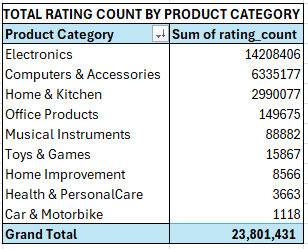
Electronics Category has the highest number of products followed by Home and Kitchen Category. While Car & Motorbike, Health & Personal Care and Toy & Care Category have the least (1)



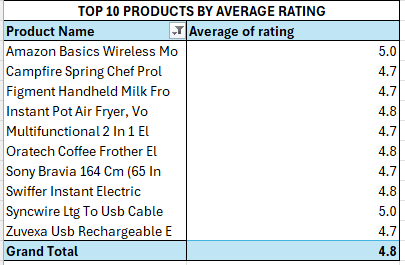
**3. Total Number of Reviews per Category**

Reviews reflect both customer interaction and satisfaction.

Electronics have highest total number of reviews per category and Health & Personal Care has the lowest. A category with high sales but few reviews may need better post-purchase engagement strategies.

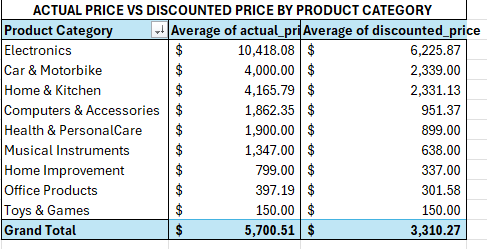


**4. Average Rating by Product**

Ratings are essential indicators of product quality and customer perception. 

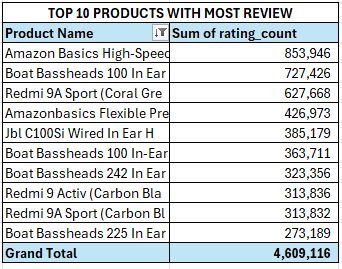
**5. The average of actual price vs the discounted price by category**

The Electronics Category led in both average.



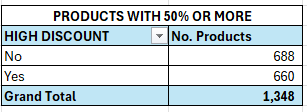
**6. Products with the highest number of reviews.**

The table shows the top 5 products with the highest number of reviews in order.

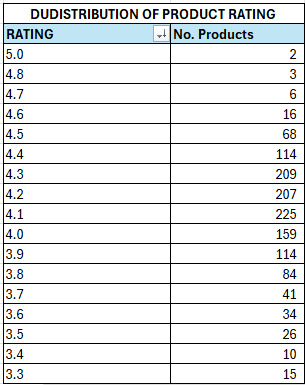


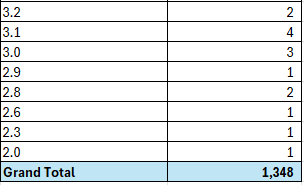
**7. Number Products with Discount ≥ 50%**

This task identifies aggressive discounting patterns. There are **662 products.**



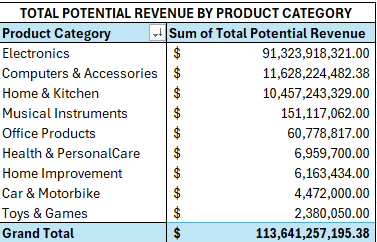
**8. The distribution of product ratings (e.g., how many products are rated 3.0, 4.0, etc.)**





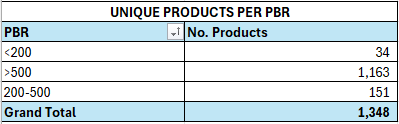
**9.** **Revenue Contribution by Product Category**

Revenue analysis highlights top-performing categories and helps optimize inventory. Electronics contribute more the revenue than any other categories with Toy & Games being the last.



**10. The number of unique products per price range bucket.**

This is showing the number unique products per price range.



**11. How does the rating relate to the level of discount?**



It shows the distribution of what appears to be the count of ratings (on the y-axis) across different discount level ranges (on the x-axis).

Here's an analysis of how rating relates to the level of discounT:

**Overall Trend:**

The chart shows a bell-shaped or normal-like distribution, suggesting that the highest number of ratings are concentrated around mid-range discount levels, specifically between 41% and 70%.

**Detailed Breakdown:**

* **0%-10% Discount:** There are relatively few ratings in this lowest discount range, approximately 350.
* **11%-20% Discount:** The number of ratings increases slightly to just under 400.
* **21%-30% Discount:** There's a more significant jump, with ratings around 650.
* **31%-40% Discount:** The number of ratings continues to increase, reaching approximately 700.
* **41%-50% Discount:** This range has the highest number of ratings, close to 1,000. This is the peak of the distribution.
* **51%-60% Discount:** This range also shows a very high number of ratings, just over 900, which is still very close to the peak.
* **61%-70% Discount:** The number of ratings starts to decrease but remains high, around 770.
* **71%-80% Discount:** There's a more significant drop, with ratings around 540.
* **81%-90% Discount:** The number of ratings decreases sharply to less than 200.
* **91%-100% Discount:** There are very few ratings in this highest discount range, almost negligible (less than 50).

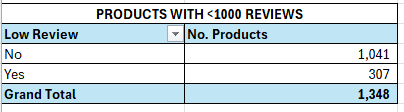
**Interpretation of the Relationship:**

* **Optimal Discount Range for Ratings:** The data suggests that products offered with discounts between **41% and 70%** tend to accumulate the highest number of ratings. This could imply that these discount levels are attractive enough to encourage purchases, leading to more feedback (ratings).
* **Lower Discount, Fewer Ratings:** Very low discount levels (0%-20%) seem to result in fewer ratings, possibly because these offers are not as appealing or don't drive as much sales volume.
* **Higher Discount, Fewer Ratings:** Interestingly, extremely high discount levels (above 70%) also show a sharp decline in the number of ratings. This could be due to several reasons:
  + Such high discounts might be rare, limiting the sample size.
  + They might be for niche or less popular products that don't generate many sales regardless of the discount.
  + Consumers might view extremely high discounts with suspicion, questioning the product's quality or original value.
* **Correlation vs. Causation:** It's important to note that this chart shows a correlation. While certain discount levels *coincide* with higher numbers of ratings, it doesn't definitively prove that the discount *causes* more ratings. Other factors like product quality, marketing, and brand popularity also influence sales and, consequently, the number of ratings. However, a plausible interpretation is that these "sweet spot" discount levels effectively stimulate sales and user engagement (leading to more ratings).

In conclusion, the chart indicates that a moderate to significant discount range (approximately 41% to 70%) is associated with the highest volume of ratings, suggesting these discount levels are most effective in driving consumer engagement and feedback.

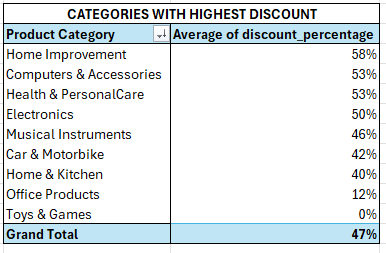
**12. Products that have fewer than 1,000 reviews**

There are **307 Products** that have fewer than 1,000 reviews.



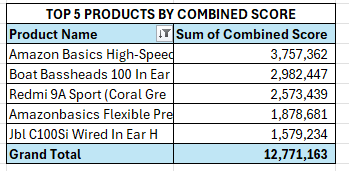
**13. Categories that have products with the highest discounts.**

Computer & Accessories have the product with the highest discounts follows Electronics Categories.



**14. Identify the top 5 products in terms of rating and number of reviews combined.**

A custom score field helps rank products based on a combination of price, reviews, and ratings.  
Products with high scores and high revenue can be used in upsell campaigns.



**Dashboard**

**Key Tasks and Insights**

**KPI Cards**

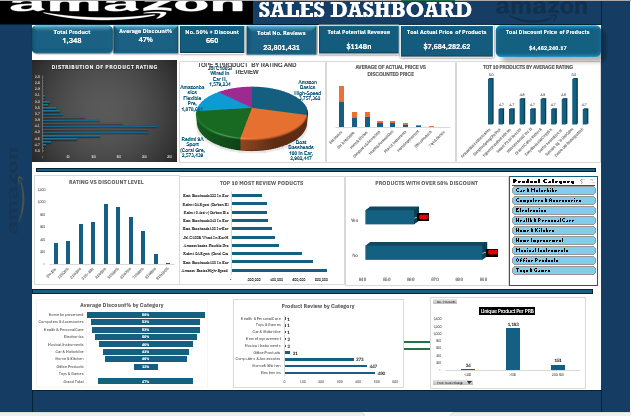
* Total Revenue is **$114BN**
* Average Discount % is **47%**
* Average Rating is **4.8%**
* Number of Products is **1348**

**Slicers (Filters)**

* Product Category (**Category**)
* Discount <= 50%
* Price Buckets

These allow users to filter the data dynamically and view performance

**DASHBOARD VIEW**



**TOP 5 PRODUCTS BY REVENUE**

These are the top 5 products in the chart, It displays the distribution of reviews for the top 5 products. Each slice represents a product, and the size of the slice corresponds to the number of reviews it has received.

Here's an analysis of the chart:

**Overall:**

* The chart clearly illustrates the top 5 products based on the number of ratings and reviews.
* The numbers accompanying each product name likely represent the total count of reviews or a combined metric of rating and review volume.

**Specific Product Analysis:**

1. **Amazon Basics High-Speed:** This product has the largest share of the pie, with **3,757,362** reviews. This indicates it is significantly more reviewed than the other products listed.
2. **Boat Bassheads 100 In Ear:** This product comes in second, with **2,982,447** reviews. It represents a substantial portion of the total reviews, though less than the Amazon Basics High-Speed.
3. **Redmi 9A Sport (Coral Gre):** Ranking third, this product has **2,573,439** reviews.
4. **Amazonbasics Flexible Pre:** This product is fourth with **1,878,681** reviews.
5. **Jbl C100 Si Wired In Ear H:** This product has the smallest share among the top 5, with **1,579,234** reviews.

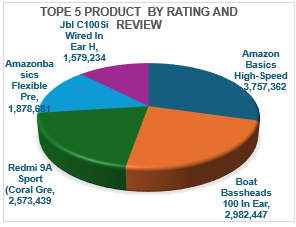
**Key Takeaways:**

* **Dominance of Amazon Basics High-Speed:** This product clearly leads the pack in terms of review volume, suggesting high popularity or widespread adoption.
* **Strong Performance of Boat Bassheads:** This product is a strong contender, close behind the leader.
* **Significant Gap between Top 2 and Others:** There's a noticeable drop-off in review numbers after the top two products.
* **Variety of Products:** The top products span different categories (e.g., "High-Speed" (likely cable/tech accessory), "In Ear" headphones, "Redmi 9A Sport" (likely a phone)).

**Limitations/Assumptions:**

* **"Rating and Review":** The exact methodology for combining "rating" and "review" into a single metric isn't specified. It's assumed the numbers represent the total count of reviews.
* **Context Missing:** Without knowing the product categories or the platform from which this data was gathered (e.g., Amazon, Flipkart), a deeper analysis of market share or competitive landscape isn't possible.
* **"TOP 5":** The chart only shows the top 5. There might be a long tail of other products with fewer reviews.

In summary, the pie chart effectively visualizes the relative popularity of these five products based on their review volume, with Amazon Basics High-Speed standing out as the most reviewed.



**TOP 5 CATEGORIES BY REVENUE**

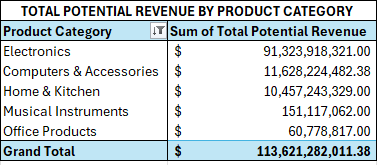
The revenue distribution clearly highlights **Electronics** as the dominant category, generating over ₹56.6 billion — far outpacing all others. **Home & Kitchen** and **Computers & Accessories** follow distantly, while **Musical Instruments** and **Office Products** contribute minimal revenue in comparison.

*Key Observations:*

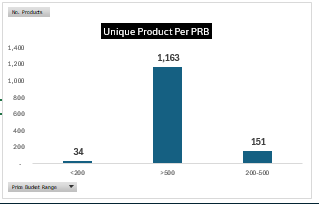
* **Electronics** alone drives the majority of total revenue.
* There’s a steep drop-off after the top category, indicating a highly skewed sales concentration.

*Recommendation:*

* Leverage the performance of Electronics with upselling and cross-selling strategies (e.g., pair with accessories).
* Explore ways to boost revenue in lower-performing categories through targeted promotions or product diversification.



**REVENUE DISTRIBUTION BY PRICE BUCKET**  
The chart illustrates revenue distribution across three price segments: under **$** 200, **$**200 – **$**500, and above **$** 500. This breakdown helps identify which price range contributes most to overall revenue, informing pricing strategy and target audience focus. Further analysis could explore trends or shifts in consumer preference among these categories.



**DISCOUNT% VS AVERAGE RATINGS**

This chart shows a weak correlation. As Discount increases, ratings slightly decrease. But the relationship is not strong, the effect is small. This could be due to product quality, clearance items, or user expectation.

