

# Analysis Report: Amazon Toys & Games (144 Products)

## Introduction

This report analyzes a dataset of 144 toy products, focusing on their ratings, number of reviews, and rating categories. The data includes columns such as Product Name, Price INR, Rating, Number of Reviews, Price Range, Rating Category, and Review Category. The goal is to understand the overall quality of the products, identify trends between popularity and ratings, highlight top-performing products, and provide actionable insights for stakeholders (e.g., toy manufacturers, retailers, or consumers). The analysis is based on four key visualizations created in Power BI.

## 1. Average Rating by Review Category

### Description:

- This chart shows the average rating for products grouped by their Review Category, which is based on the number of reviews:
  - Few Reviews (1-9): Average Rating = 5.0
  - Some Reviews (10-49): Average Rating = 4.6
  - Many Reviews (50-99): Average Rating = 4.1
  - Lots of Reviews (100-499): Average Rating = 4.1
  - Very Popular (500+): Average Rating = 4.0



### Analysis:

- Products with *Few Reviews (1-9)* have a perfect average rating of 5.0. However, this category likely includes a small number of products, and the high rating may be due to limited feedback (potentially biased or from early adopters).
- Products with *Some Reviews (10-49)* have a high average rating of 4.6, indicating strong customer satisfaction among products with moderate review counts.
- As the number of reviews increases, the average rating decreases slightly:
  - *Many Reviews (50-99)* and *Lots of Reviews (100-499)* both have an average rating of 4.1.
  - *Very Popular (500+)* products have the lowest average rating at 4.0.
- This trend suggests that products with more reviews tend to have more varied feedback, potentially including critical reviews that lower the average. However, even the lowest average (4.0) is still considered “Very Good” (based on the Rating Category definitions).

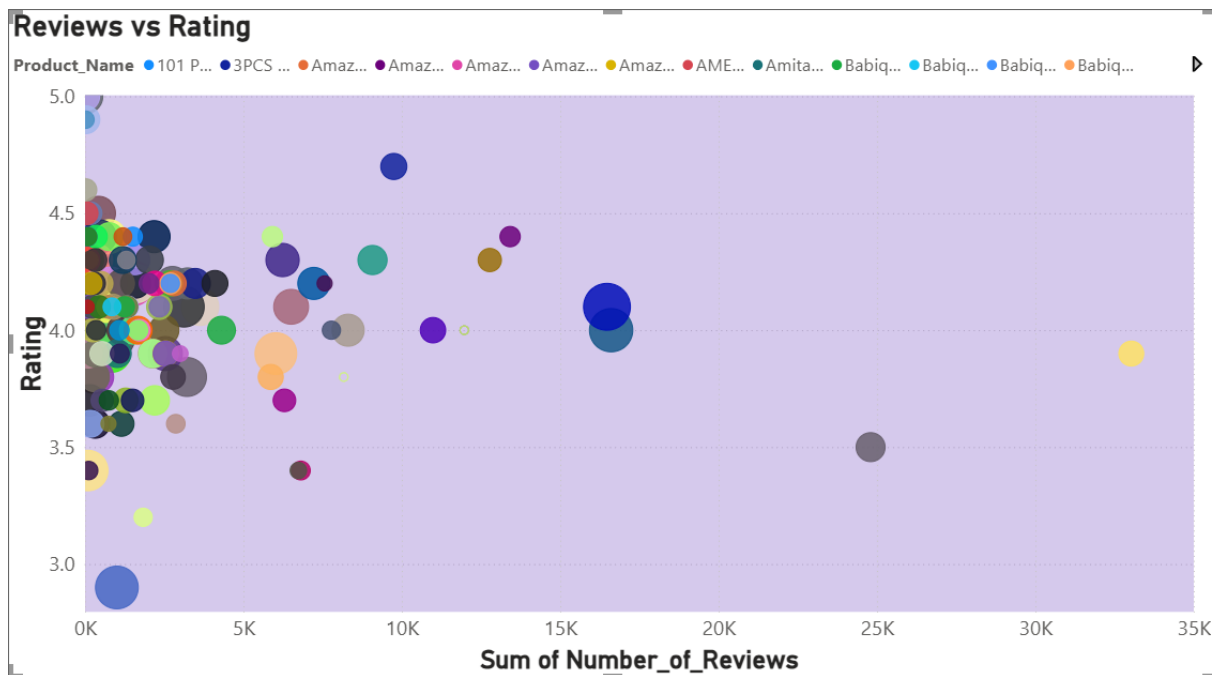
### Insight:

- Products with fewer reviews (1-49) tend to have higher average ratings, possibly due to limited but positive feedback. However, these ratings may not be as reliable due to the small sample size.
- Very Popular products (500+ reviews) have a slightly lower average rating (4.0), but this is still a strong score, indicating consistent quality even with high scrutiny.

## 2. Reviews vs. Rating

### Description:

- This scatter plot visualizes the relationship between the Number of Reviews (X-axis) and Rating (Y-axis) for each product.
- The X-axis (Sum of Number of Reviews) ranges from 0 to 35,000.
- The Y-axis (Rating) ranges from 3.0 to 5.0.
- Each dot represents a product, with the size and color varying (though the legend is not fully visible, it appears to be based on Product Name or another category).



#### Analysis:

- Most products are clustered on the left side of the chart, with fewer than 5,000 reviews. This indicates that the majority of the 144 products are not “Very Popular” (500+ reviews), aligning with the Review Category distribution.
- Ratings range from 3.0 to 5.0, with most products falling between 3.5 and 4.5.
- A few outliers are notable:
  - One product with ~25,000 reviews has a rating of ~4.0, likely a “Very Popular” product (possibly Babique Dog Sitting Plush Soft Toy, which had 2,691 reviews in the smaller dataset, but this could be a different product with more reviews).
  - Another product with ~35,000 reviews has a rating of ~4.5, indicating a highly popular product with strong customer satisfaction.
- There’s no clear linear trend (e.g., a trend line would likely be flat or slightly downward), suggesting that the number of reviews doesn’t strongly correlate with higher or lower ratings.

#### Insight:

- Popularity (number of reviews) doesn’t guarantee a higher rating. Some products with many reviews (e.g., 25,000) have a rating of 4.0, while others with fewer reviews achieve 5.0.
- The presence of a product with ~35,000 reviews and a 4.5 rating is a standout, indicating a widely purchased product that maintains high quality.

### 3. Top 10 Products by Rating

#### Description:

- This table lists the top 10 products by rating (sorted descending):

Product Name	Rating
Lifelong Cuppy Horse Ride-On for Kids 1+ Years   Sturdy & Comfortable Push Ride   Safe & Durable Design   Indoor & Outdoor Play Toy Vehicle for Boys & Girls   Fun & Engaging Toddler Ride-On (LLCHR01)	5.00
STOFFIER GARTEN Xylophone School Bus Toy, Xylophone Baby Toys 12-18 Months, Baby Girl Toy Push & Pull Toy Educational and Learning Toys for 1 Year Old Best Gift for Kids Toddlers	5.00
KRIDHA TOYS Plastic Geometric Blocks, Sorting & Stacking Toys for Toddlers and Kids Preschool, Color Stacker Shape Sorter Gift Educational Learning Toy for 3 Years Old Boys and Girls	4.90
MiniExplorer 2 in 1 Monkey and Banana Balancing Toy for Kids with Educational Math Counting Number Learning Activity Toy Engaging Preschool Game Children's Gift for Boys Girls 3 4 5 6 7 8 Years	4.90
3PCS ALASOU Suction Cup Spinner Toys for 1 2 Year Old Boy&Girl Toddler Toys Age 1-2 1 2 Year Old Boy Birthday Gift for Infant Sensory Baby Bath Toys for Toddlers 1-3	4.70
Storio Soft Plush Giraffe Toy for Kids   Ultra-Soft Cuddly Stuffed Animal for Babies, Toddlers & Children   Cute Hugging Toy for Boys & Girls   Washable & Safe   Birthday Gift for 1-6 Year Old	4.60
AMENDAS Wooden Learning Educational Board for Kids, Puzzle Toys for 2 Years Old Boys & Girls Educational Toys for Toddlers & Preschoolers, ABCD (Alphabet, Numbers, Shapes)	4.50
Niwlix Memory Chess Game, Color Memory Chess, Board Games, Educational Intelligent Games Toys for Boys and Girls Fun Adults at Home Zone Toys for 6 Year Old Boy funzone	4.50
Panda's Box Mantra Chanting Baby Ganesha (Small - 20 CM)   Musical Soft Plush Toy   Best Gift for Infants, Toddlers & Babies	4.50
101 Pencil Control Activity Book For Kids: Tracing Practise Book Age 2+	4.40
Amazon Brand - Jam & Honey Dinosaur, Cute, Plush/Soft Toy, Suitable for Boys, Girls and Kids, Super-Soft, Safe, 34 cm (Green & Yellow)	4.40
eErlík 1Pc Fidget Wrist Band for Kids with LED Light Up Silicone Strap - Cartoon Bracelet Wristband Birthday Return Gift for Boys & Girls	4.40

#### Analysis:

- The top two products have a perfect rating of 5.0, indicating exceptional customer satisfaction.
- The next two products (4.9) are very close to perfect, followed by a gradual decline to 4.4 for the last two products.
- Most of these products are educational or sensory toys (e.g., geometric blocks, balancing toys, memory games), suggesting that parents value toys that promote learning and development.
- The ratings align with the Rating Category definitions:
  - 5.0: Excellent (4.5+)
  - 4.6-4.9: Excellent (4.5+)
  - 4.4-4.5: Very Good (4.0-4.4)

#### Insight:

- The top-rated products are primarily educational and sensory toys, indicating a preference for toys that offer developmental benefits.
- The highest-rated products (5.0) are likely to be strong candidates for recommendations or marketing focus due to their perfect scores.

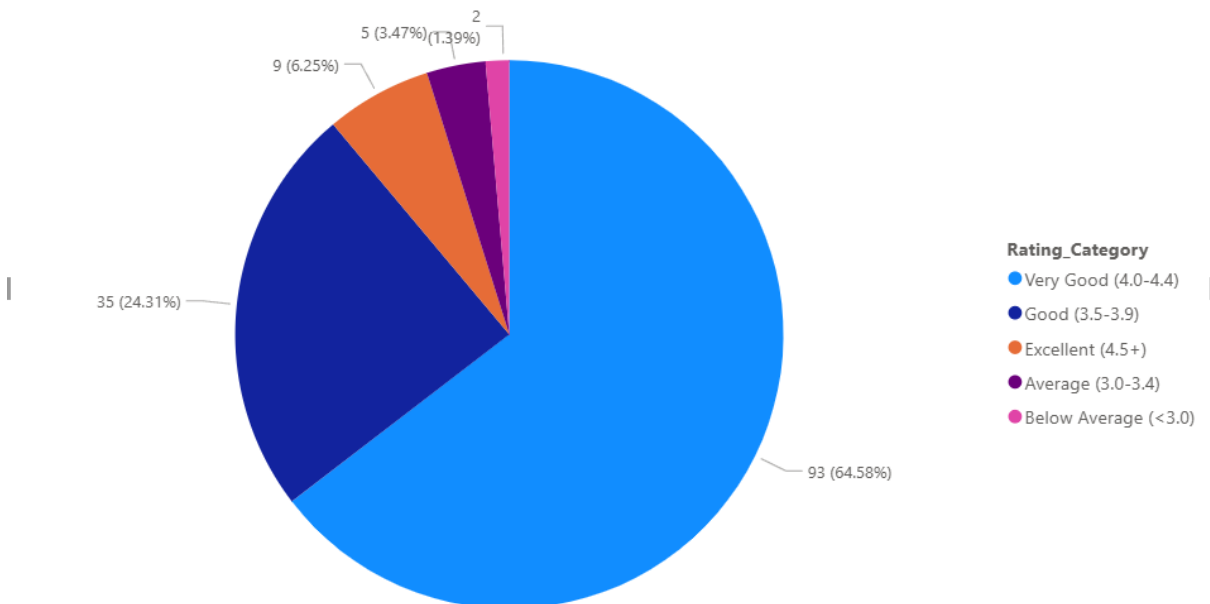
## 4. Count of Rating Category

#### Description:

- This pie chart shows the distribution of products across Rating Categories:
  - Very Good (4.0-4.4): 93 products (64.58%)

- Good (3.5-3.9): 35 products (24.31%)
- Excellent (4.5+): 9 products (6.25%)
- Average (3.0-3.4): 5 products (3.47%)
- Below Average (<3.0): 2 products (1.39%)

## Count of Rating\_Category by Rating\_Category



### Analysis:

- The majority of products (93 out of 144, or 64.58%) fall into the “Very Good” category (4.0-4.4), indicating that most toys in this dataset are well-received by customers.
- 24.31% of products (35) are rated “Good” (3.5-3.9), showing a significant portion of products are still positively rated but not as highly as the majority.
- Only 9 products (6.25%) are rated “Excellent” (4.5+), which aligns with the Top 10 table (where only 4 products had ratings of 4.6 or higher).
- A small number of products are rated poorly:
  - 5 products (3.47%) are “Average” (3.0-3.4).
  - 2 products (1.39%) are “Below Average” (<3.0), indicating a very small fraction of products have significant quality issues.

### Insight:

- The overall quality of the toy products is high, with 64.58% rated “Very Good” and 6.25% rated “Excellent.”
- Only a small fraction (4.86%) of products have ratings below 3.5, suggesting that quality issues are rare in this dataset.

## Key Insights

### 1. Overall Quality:

- The majority of products (64.58%) are rated “Very Good” (4.0-4.4), and 6.25% are “Excellent” (4.5+), indicating a high overall quality across the 144 products.
- Only 4.86% of products are rated “Average” or “Below Average,” suggesting that poor-quality products are uncommon.

### 2. Popularity vs. Quality:

- Products with fewer reviews (1-49) have higher average ratings (5.0 and 4.6), but this may be due to limited feedback.
- Very Popular products (500+ reviews) have a slightly lower average rating (4.0), but this is still a strong score, showing that popular products maintain good quality despite higher scrutiny.
- The scatter plot shows no strong correlation between the number of reviews and rating, with some highly reviewed products (e.g., ~35,000 reviews) achieving a high rating of 4.5.

### 3. Top Performers:

- The top-rated products are educational and sensory toys, such as the Lifelong Cupy Horse Ride-On (5.0) and STOFFIER GARTEN Xylophone School Bus Toy (5.0).
- These products are likely to be strong candidates for marketing or recommendations due to their high customer satisfaction.

### 4. Areas for Improvement:

- The 7 products rated “Average” or “Below Average” (4.86% of the dataset) should be investigated for quality issues. These products may have design flaws, durability issues, or fail to meet customer expectations.