The Godfather of Talent | Futurense

Amazon Product Analysis

Members -

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PROJECT OVERVIEW

Dataset : Amazon E-commerce Scraped Data

Data Description :

Categorical Column

1. Name
2. Main Category
3. Sub Category
4. Image
5. Link

Numerical Column

6. Ratings
7. No. of Ratings
8. Discount Price
9. Actual Price

No of Records : 551585

Steps : Cleaning, Validation, Handling missing values, Removing duplicates, Loading Data

Objective : Extract insights by providing Interactive visualizations.

Insights : Product categories, Pricing Trends, customer ratings etc.

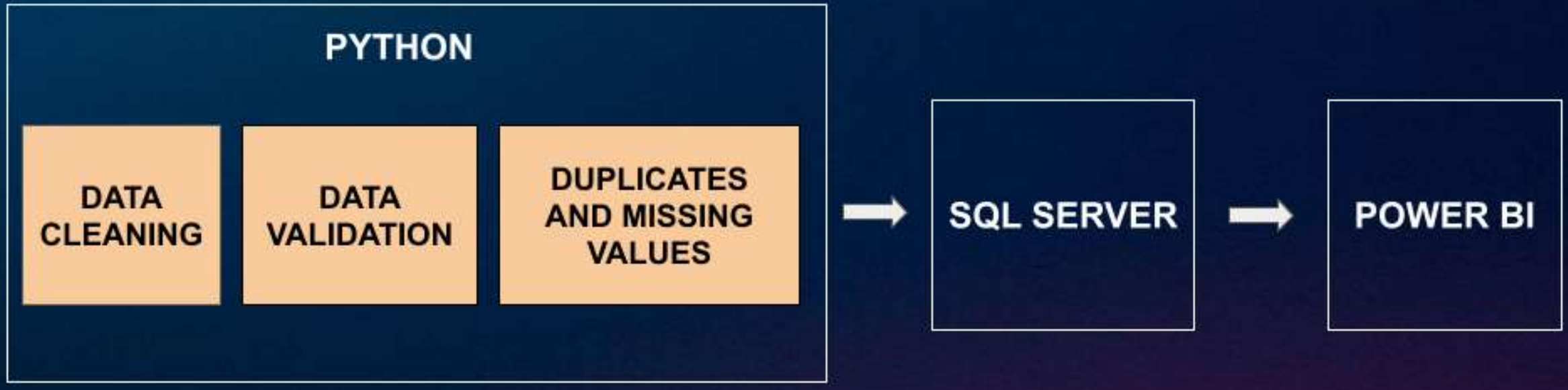
LANGUAGES USED

1. Python
2. SQL

TOOLS USED

1. Jupyter Notebook
2. SQL Server
3. Power BI

PROJECT WORKFLOW



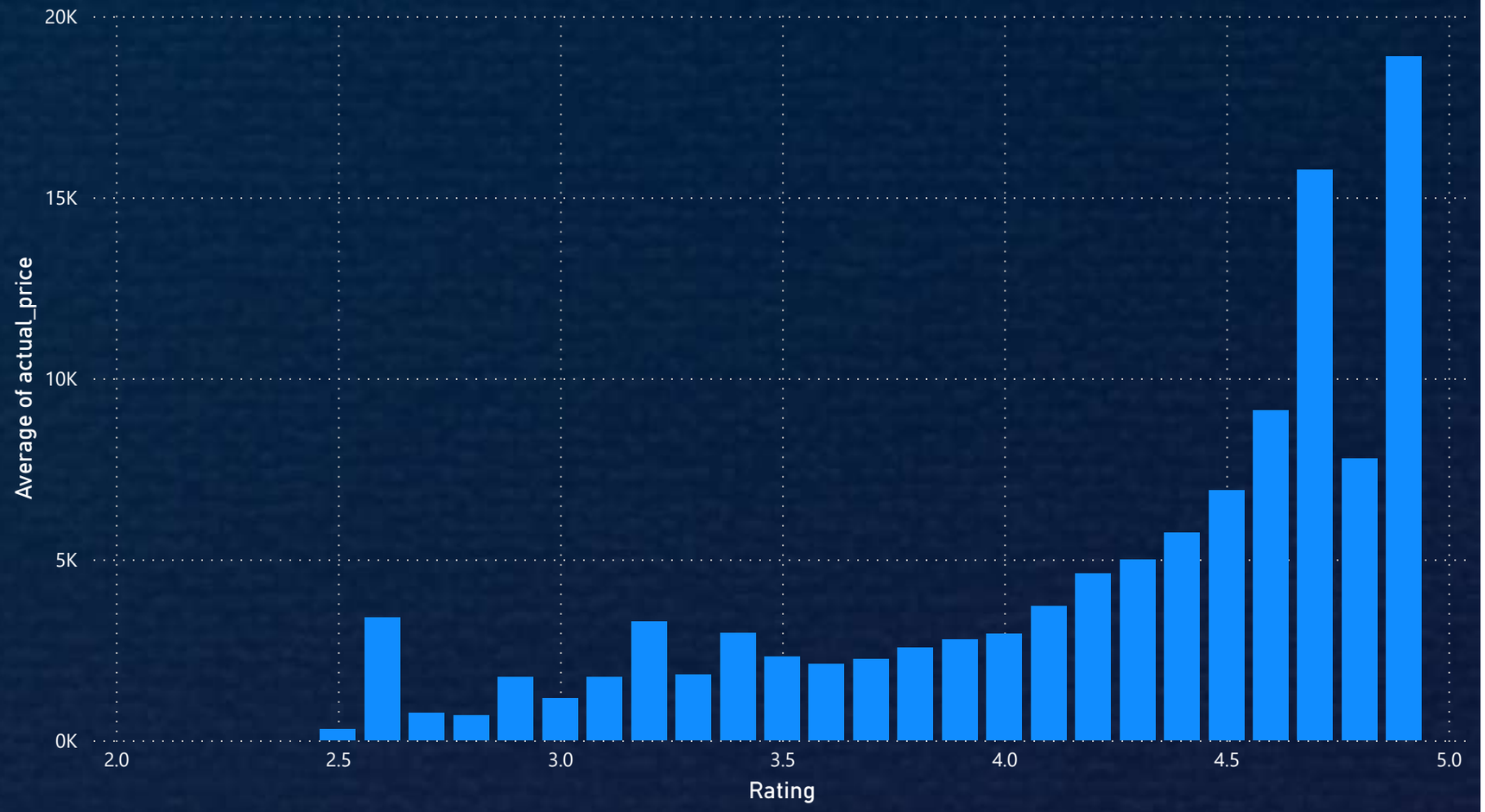
Categories

- [ ] Accessories
- [ ] Appliances
- [ ] Bags And Luggage
- [ ] Beauty And Health
- [ ] Car And Motorbike
- [ ] Grocery And Gourmet Foods
- [ ] Home And Kitchen
- [ ] Industrial Supplies
- [ ] Kids' Fashion
- [ ] Men's Clothing
- [ ] Men's Shoes
- [ ] Music
- [ ] Pet Supplies
- [ ] Sports And Fitness
- [ ] Stores
- [ ] Toys And Baby Products
- [ ] TV, Audio And Cameras
- [ ] Women's Clothing
- [ ] Women's Shoes

Slider : No of Ratings

1,000.00 589,547.00

Price VS Rating Analysis



Price VS Rating Analysis

Observations :

1. With Respect to all the categories we can see the costly products are tend to have higher ratings.

2. In Grocery Category an exceptional increase in ratings to 4.8 correlates with a significant shift towards higher-priced products, reaching prices as high as 10k.

3. Conversely, Women's clothing is having opposite trend.

Categories: All

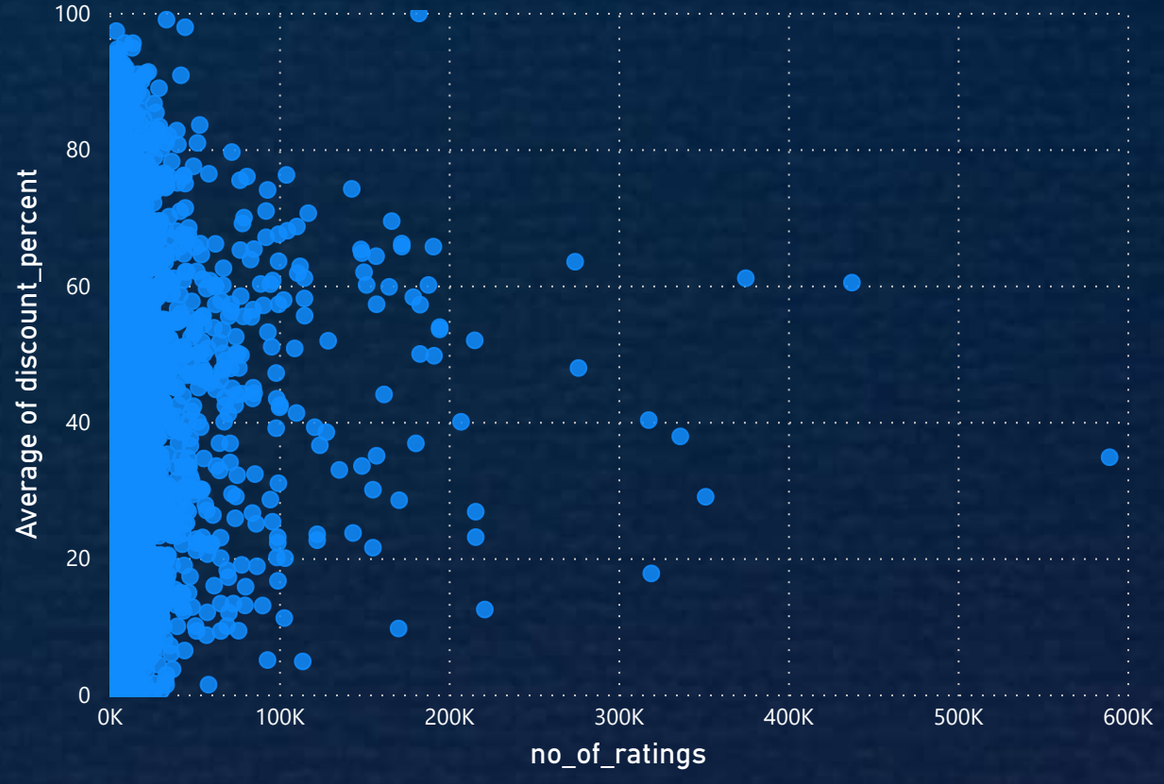
- [ ] Accessories
- [ ] Appliances
- [ ] Bags And Luggage
- [ ] Beauty And Health
- [ ] Car And Motorbike
- [ ] Grocery And Gourmet Foods
- [ ] Home And Kitchen

Slider : No of Ratings

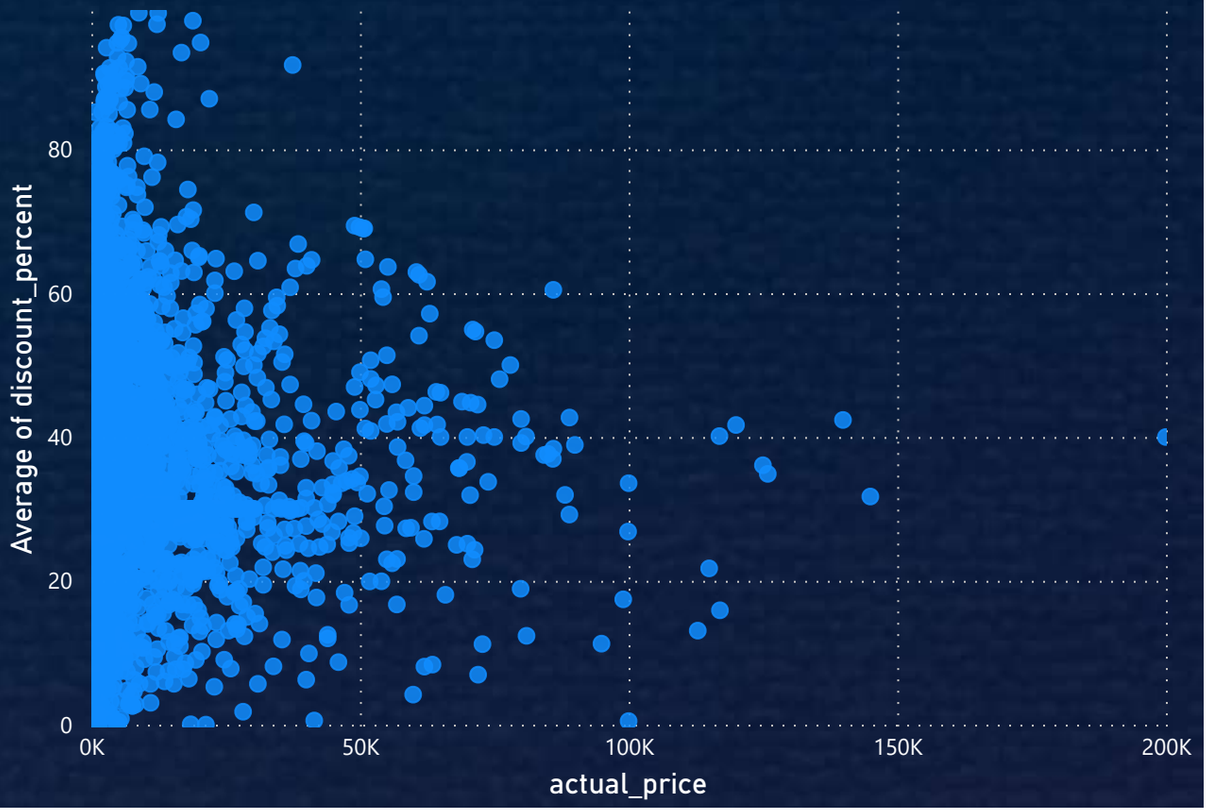
no_of_ratings

1,000.00 589,547.00

Discount Percent VS No of Ratings



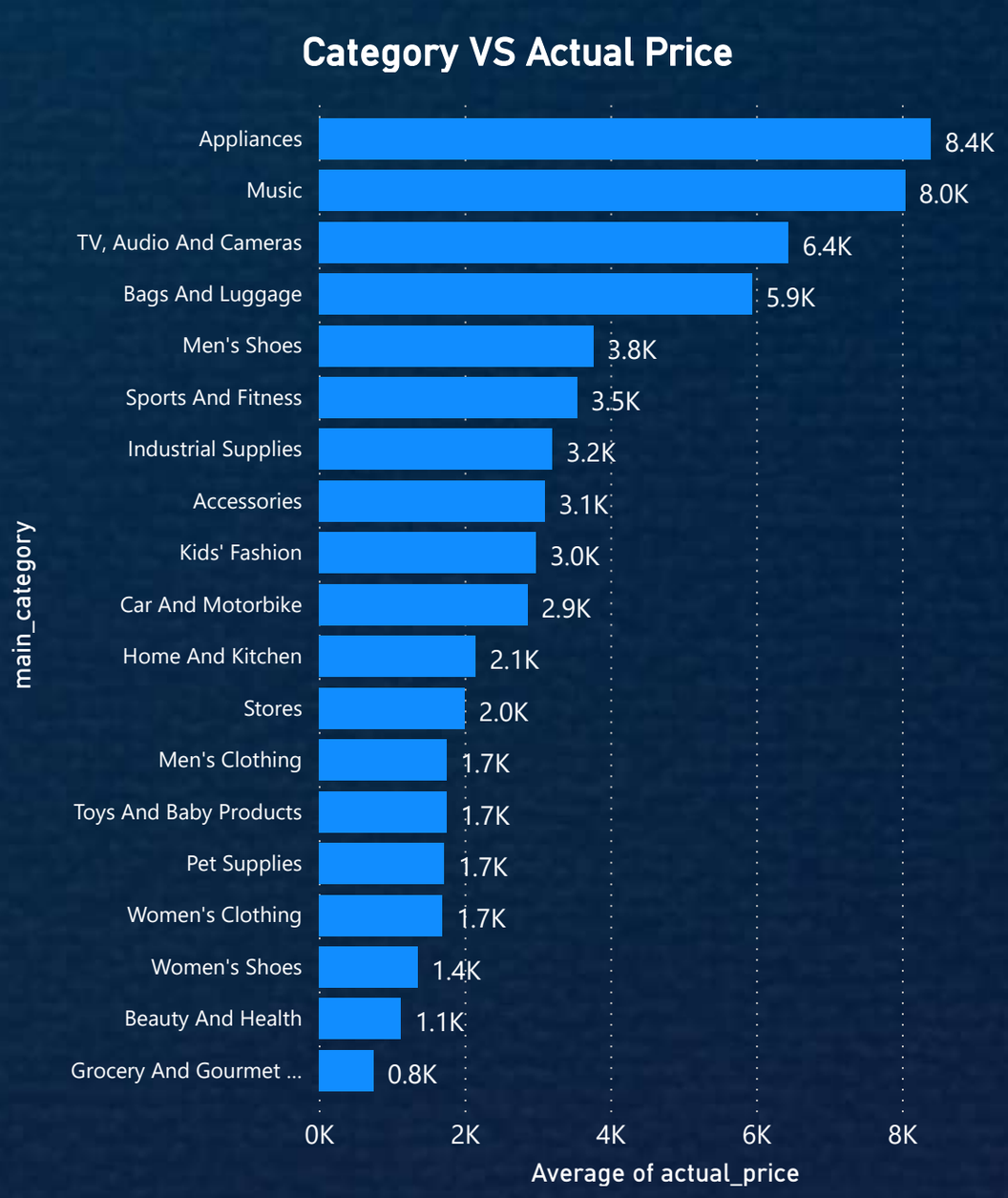
Discount Percent VS Actual Price

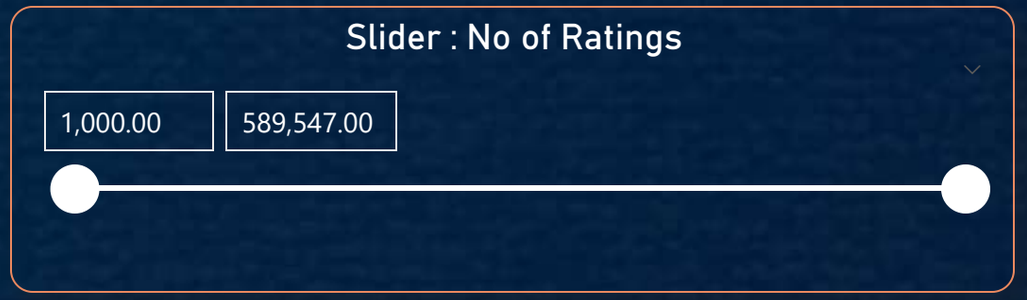


Discount Percent VS No of Ratings VS Actual Price

Observation :

- Products with low No of ratings (less than 0.1M) and Products priced below 50k are more likely to have discounts.


Category VS Actual Price
main_category
Appliances
Music
TV, Audio And Cameras
Bags And Luggage
Men's Shoes
Sports And Fitness
Industrial Supplies
Accessories
Kids' Fashion
Car And Motorbike
Home And Kitchen
Stores
Men's Clothing
Toys And Baby Products
Pet Supplies
Women's Clothing
Women's Shoes
Beauty And Health
Grocery And Gourmet ...
8.4K
8.0K
6.4K
5.9K
3.8K
3.5K
3.2K
3.1K
3.0K
2.9K
2.1K
2.0K
1.7K
1.7K
1.7K
1.7K
1.4K
1.1K
0.8K
0K
2K
4K
6K
8K
Average of actual_price


Slider : No of Ratings
1,000.00
589,547.00

200K
Maximum Actual Price

10
Minimum Actual Price

4.22K
Average Actual Price

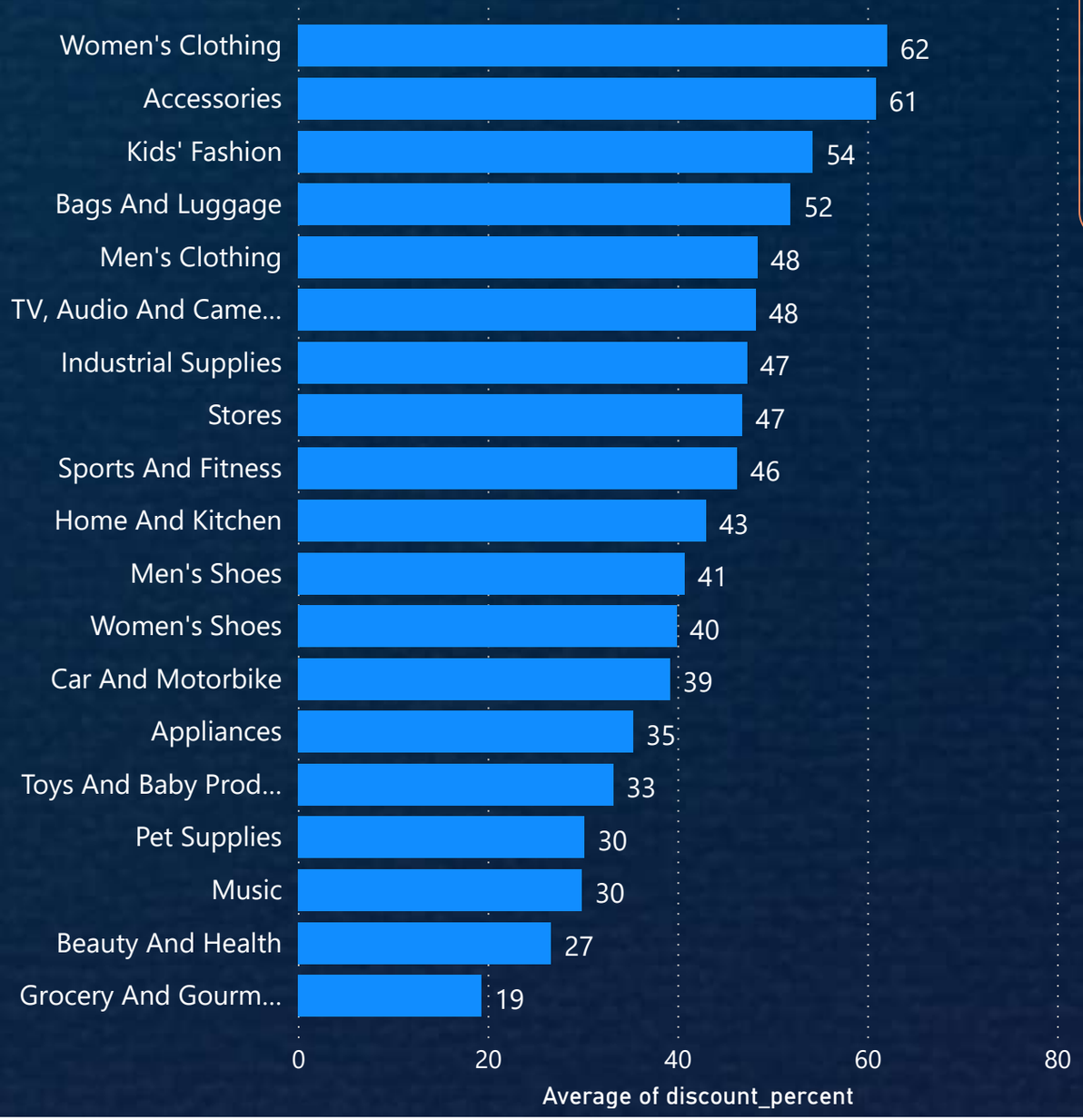
Category VS Actual Price

Observations :

1. 1. Appliances are having more average price than the other category products, because appliances are tend to be costlier products.

2. 2. Day-to-Day products such as Groceries, beauty items and clothing have affordable prices.

Discount Percentage VS Category



Slider : No of Ratings

no_of_ratings

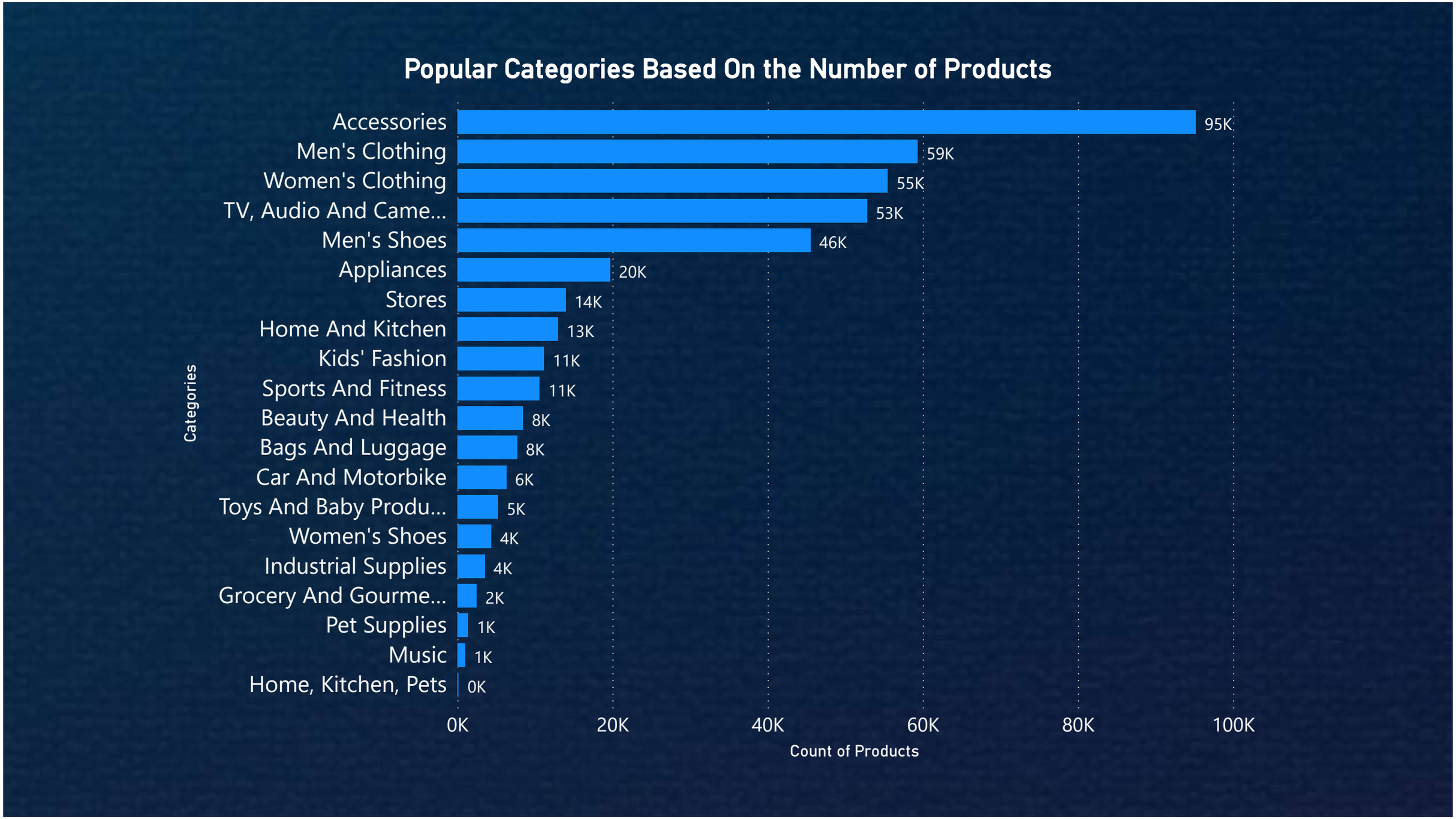
1,000.00 589,547.00

sub_category	Average of discount_percent
Fashion And Silver Jewellery	78.74
Ethnic Wear	70.41
Shirts	65.05
Cricket	64.93
The Designer Boutique	63.03
Clothing	62.36
Jeans	61.73
Jewellery	61.33
T-Shirts And Polos	59.79
Western Wear	59.02
Women's Fashion	58.50
Bags And Luggage	58.30
Backpacks	57.89
Kids' Clothing	57.10
Kids' Fashion	55.88
Yoga	54.56
Baby Fashion	54.34
Car Parts	53.73
Home Entertainment Systems	53.66
Lingerie And Nightwear	53.33
Total	46.16

Discount Percentage VS Category

Observation :

Fashion products like Clothing, Bags & Luggage, Accessories and Kid's fashion categories are receiving higher discount percentages, whereas basic necessities such as groceries, health, and pet supplies have relatively lower discounts.

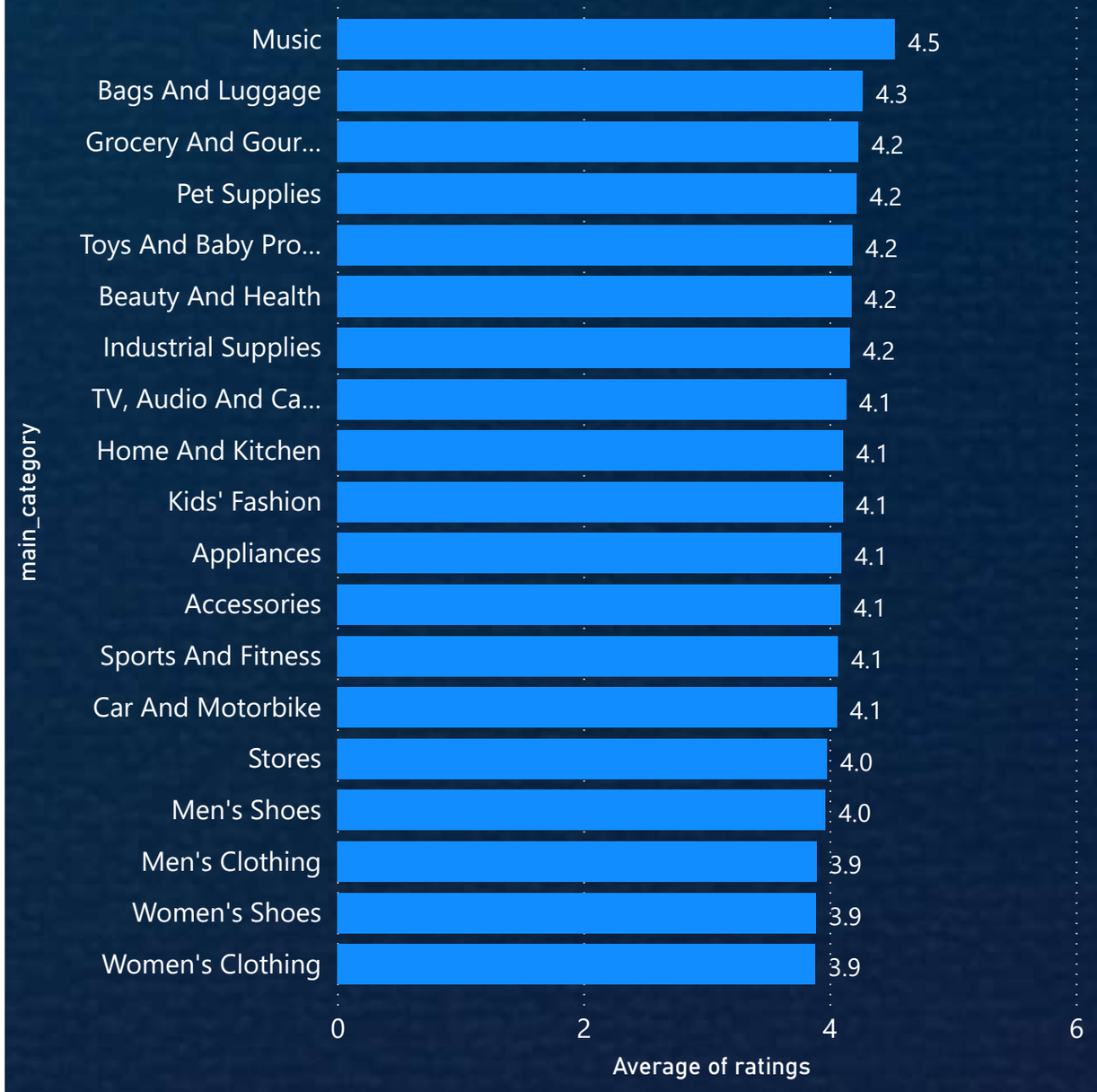

Popular Categories Based On the Number of Products
Accessories
Men's Clothing
Women's Clothing
TV, Audio And Came...
Men's Shoes
Appliances
Stores
Home And Kitchen
Kids' Fashion
Sports And Fitness
Beauty And Health
Bags And Luggage
Car And Motorbike
Toys And Baby Produ...
Women's Shoes
Industrial Supplies
Grocery And Gourme...
Pet Supplies
Music
Home, Kitchen, Pets
95K
59K
55K
53K
46K
20K
14K
13K
11K
11K
8K
8K
6K
5K
4K
4K
2K
1K
1K
0K
Categories
0K
20K
40K
60K
80K
100K
Count of Products

Categories VS Number of Products

Observations :

1. Fashion and accessories categories have highest number of products.
2. As mentioned earlier, that fashion products are having higher discount percentages, which might be related to the higher product count.

Categories VS Ratings



Slider : No of Ratings

1,000.00 589,547.00

4.08

Average Ratings

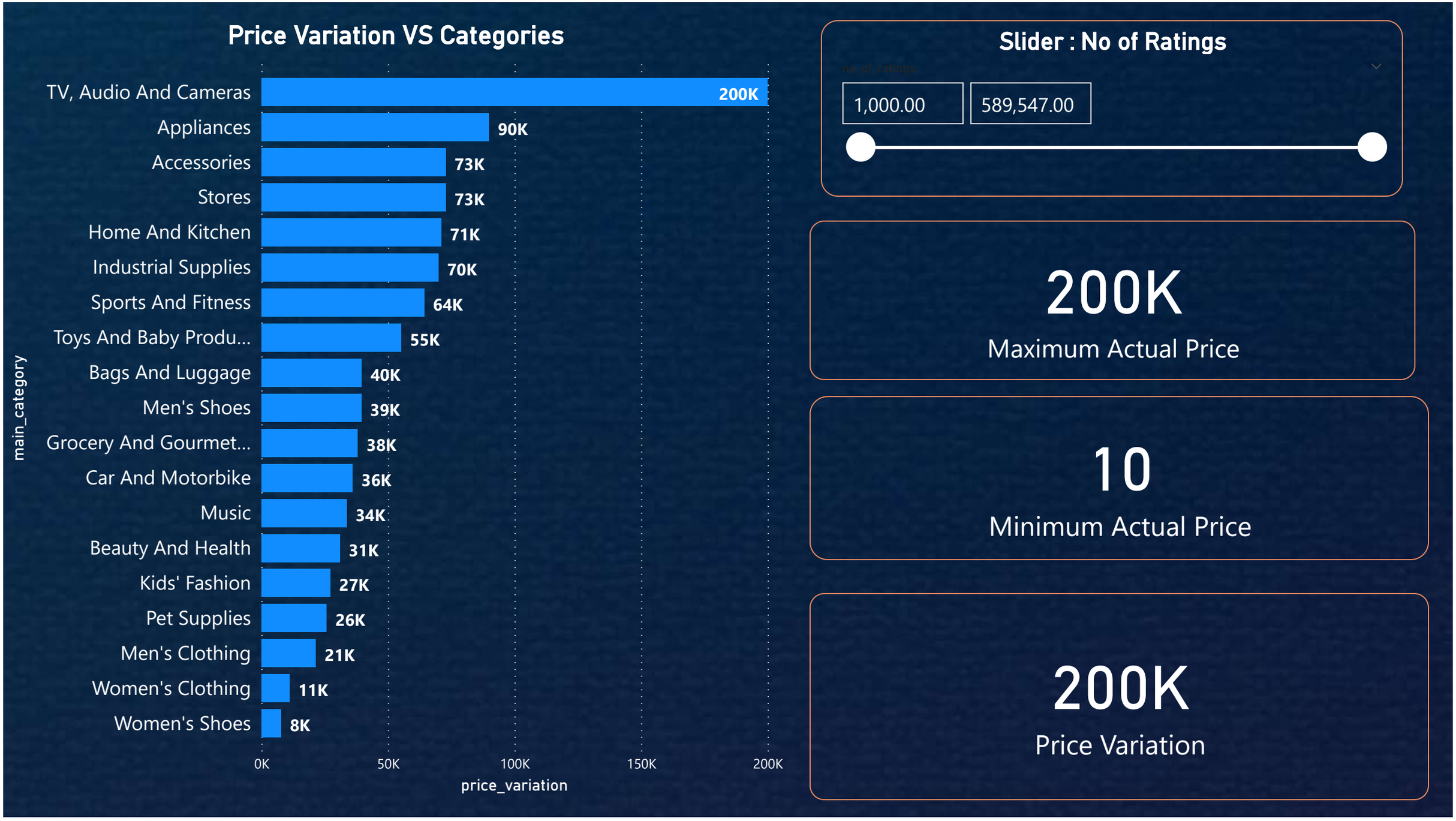
9.33K

Average No of Ratings

Category VS Ratings

Observation :

Regardless of the different categories there is no significant difference in the average ratings.


Price Variation VS Categories
TV, Audio And Cameras 200K
Appliances 90K
Accessories 73K
Stores 73K
Home And Kitchen 71K
Industrial Supplies 70K
Sports And Fitness 64K
Toys And Baby Produ... 55K
Bags And Luggage 40K
Men's Shoes 39K
Grocery And Gourmet... 38K
Car And Motorbike 36K
Music 34K
Beauty And Health 31K
Kids' Fashion 27K
Pet Supplies 26K
Men's Clothing 21K
Women's Clothing 11K
Women's Shoes 8K
main_category
0K
50K
100K
150K
200K
price_variation
Slider : No of Ratings
no_of_ratings
1,000.00
589,547.00
200K
Maximum Actual Price
10
Minimum Actual Price
200K
Price Variation

Price Variation VS Categories

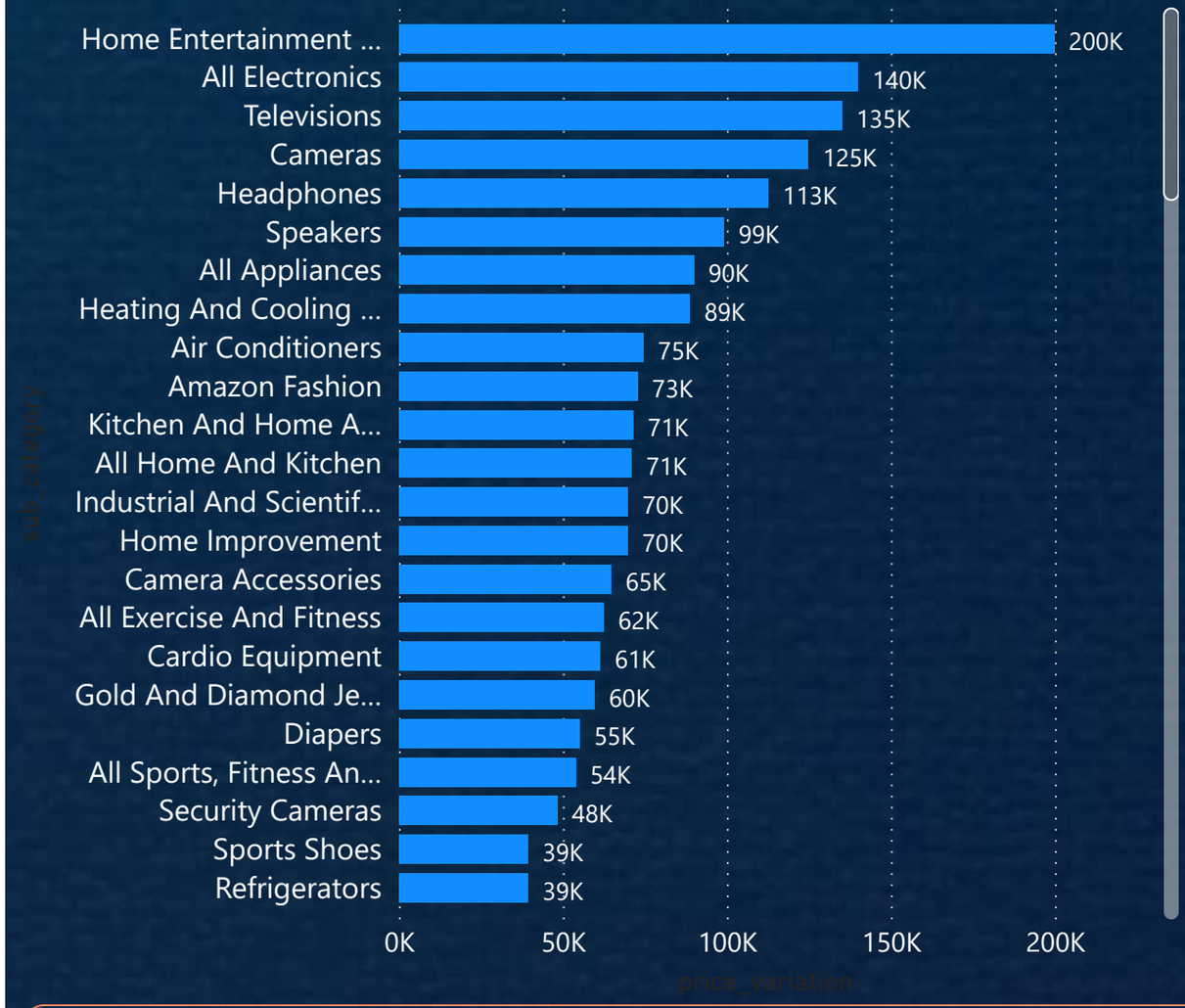
Observation :

Categories such as TV, Audio, Camera, and Accessories exhibit significant variations in prices.

Recommendation :

Consider splitting categories like TV, Audio, Camera, and Accessories to get a more fined grouping of products.

Price Variation VS Sub Category



Slider : No of Ratings

1,000.00 589,547.00

10
Minimum Actual Price

200K
Maximum Actual Price

200K
Price Variation

Costly Product

name

Vu 189 cm (75 inches) The Masterpiece Glo Series 4K Ultra HD Smart Android QLED TV 75QMP (Armani Gold) (2022 Model) | Buil...

Cheap Product

name

Kurkure Yummy Cheese Puffcorn Namkeen, 28g

Cadbury Oreo Original Vanilla Creme Biscuit, 46.3g

Price Variation VS Sub Category

Recommendation :

Home entertainment system and all electronic products can be more categorized as in television and cameras we could see that same kind of products are of varying prices.

Sub Categories

Air Conditioners	All Electronics	All Home And Kitchen	Amazon Fashion	Baby Products	Bags And Luggage	Bedroom Linen	Camping And Hiking	Car Electronics
All Appliances	All Exercise And Fitness	All Pet Supplies	Baby Bath, Skin And Grooming	Backpacks	Ballerinas	Camera Accessories	Car Accessories	Car Parts
All Car And Motorbike Products	All Grocery And Gourmet Foods	All Sports, Fitness And Outdoors	Baby Fashion	Badminton	Beauty And Grooming	Cameras	Car And Bike Care	Cardio Equipment

no_of_ratings	name
589,547	SanDisk 128GB Class 10 microSDXC Memory Card with Adapter (SDSQUAR-128G-GN6MA)
589,547	SanDisk 16GB Ultra MicroSDHC Memory Card (SDSQUAR-016G-GN6MN)
589,547	SanDisk 256GB Class 10 MicroSD Card with Adapter (SDSQUAR-256G-GN6MA)
589,547	SanDisk 400GB Class 10 MicroSD Card (SDSQUAR-400G-GN6MA) with Adapter
589,547	SanDisk 512GB Ultra MicroSDXC UHS-I Memory Card - 100MB/s, C10, U1, Full HD, A1, Micro SD Card - SDSQUAR-512G-GN6MN
589,547	SanDisk UHS-I A1 98Mbps 32GB Ultra MicroSD Memory Card
589,547	SanDisk Ultra 64GB UHS-I Class 10 Micro SD Memory Card (SDSQUNC-064G-GN3MN)
437,652	Amazon Basics Flexible Premium HDMI Cable (Black, 4K@60Hz, 18Gbps), 3-Foot
437,652	Amazon Basics High-Speed HDMI Cable - 10 Feet (2-Pack) -Latest Standard for Xbox, PlayStation, Television, Personal Comput...
437,652	Amazon Basics High-Speed HDMI Cable - 10 Feet (Latest Standard) - Supports Ethernet, 3D, 4K video,Black
437,652	Amazon Basics High-Speed HDMI Cable, 3 Feet (Black, 2-Pack) - Supports Ethernet, 3D, 4K video
437,652	Amazon Basics High-Speed HDMI Cable, 6 Feet - Supports Ethernet, 3D, 4K video,Black
437,652	Amazon Basics High-Speed HDMI Cable, 6 Feet (2-Pack),Black

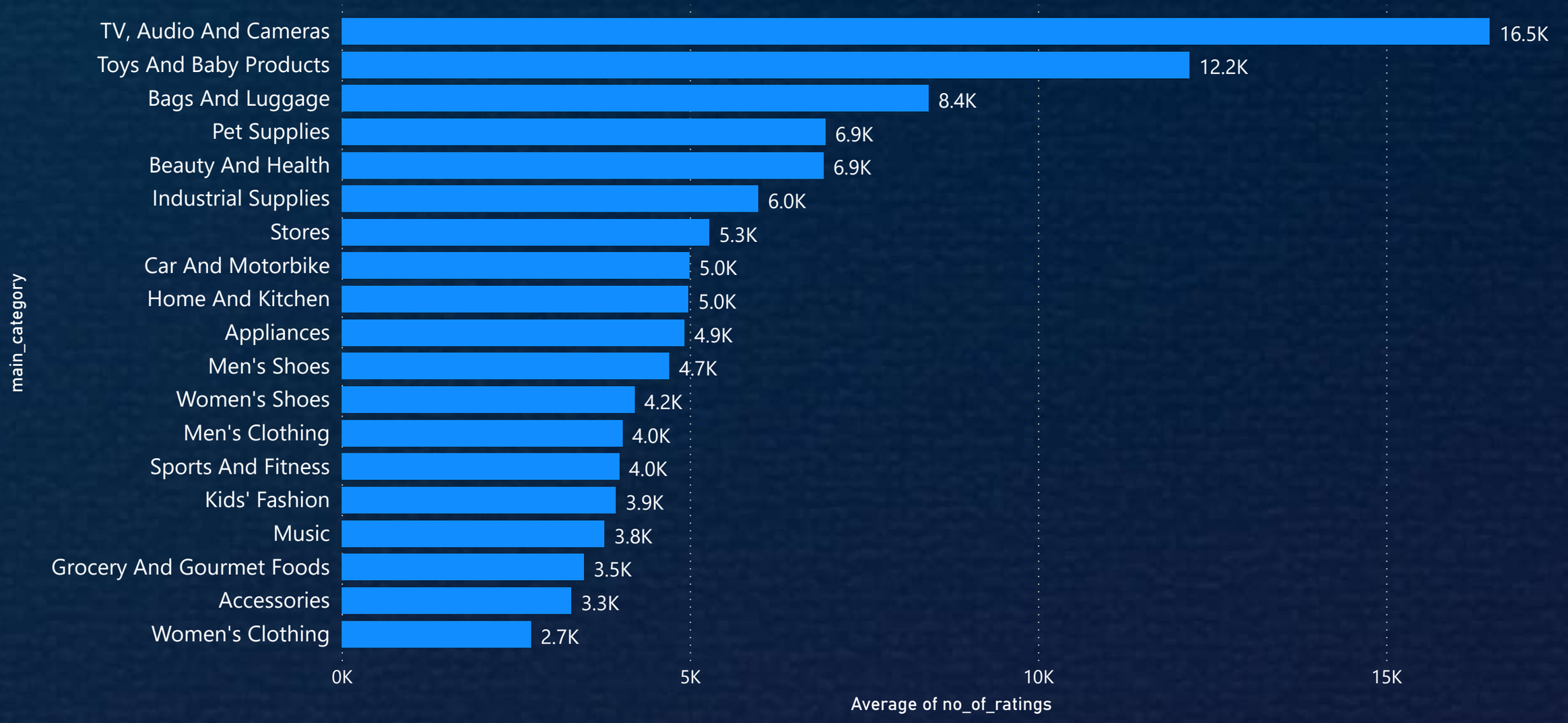
Observation :

All electronic accessories are having more number of ratings.

Slider : No of Rating

1,000.00 589,547.00

Category VS No of Rating



Category VS No of Rating

Observation :

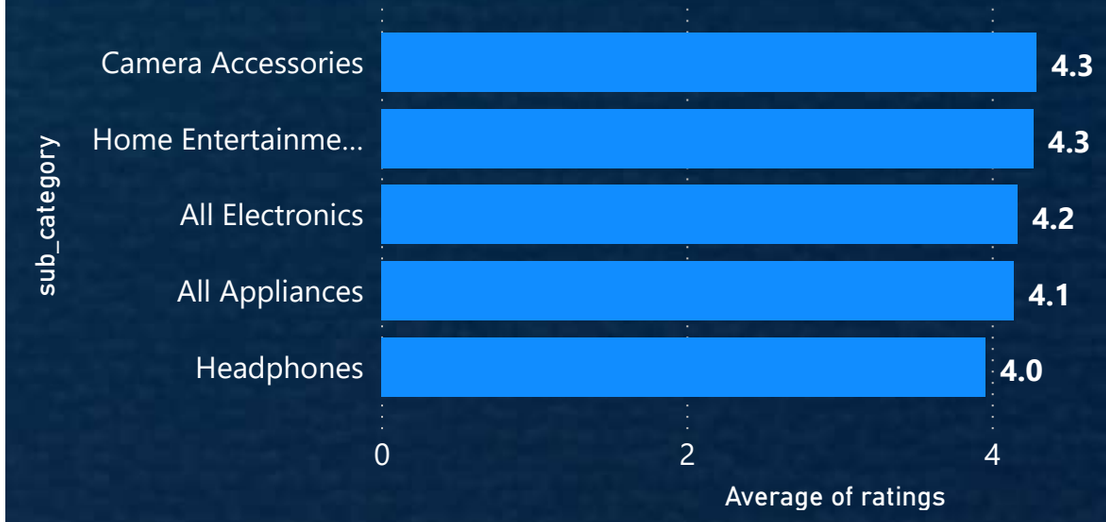
TV, Audio and Cameras are having most number of ratings.

Recommendation :

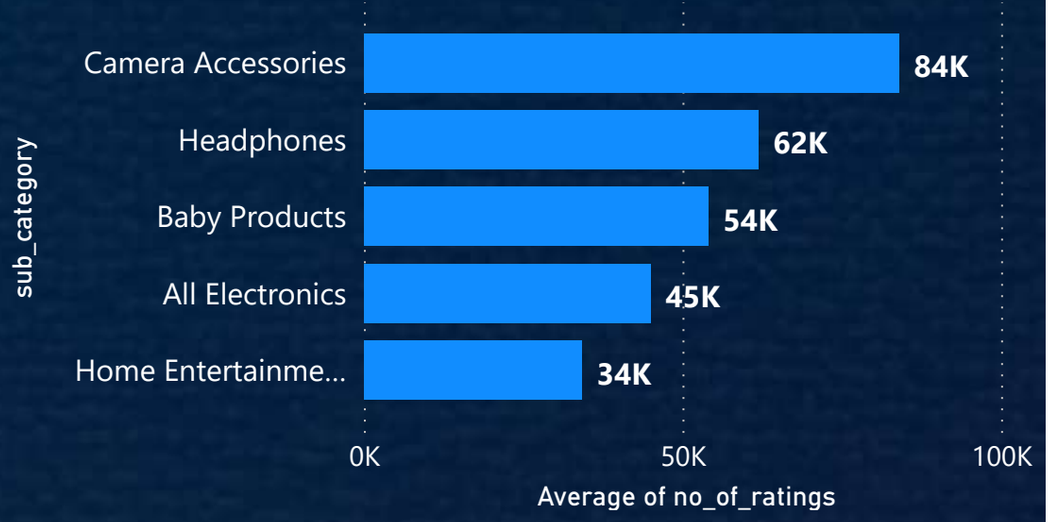
Consider splitting categories like TV, Audio, Camera, and Accessories to get a more fined grouping of products.

10,000.00 589,547.00

Sub Category VS Average Ratings

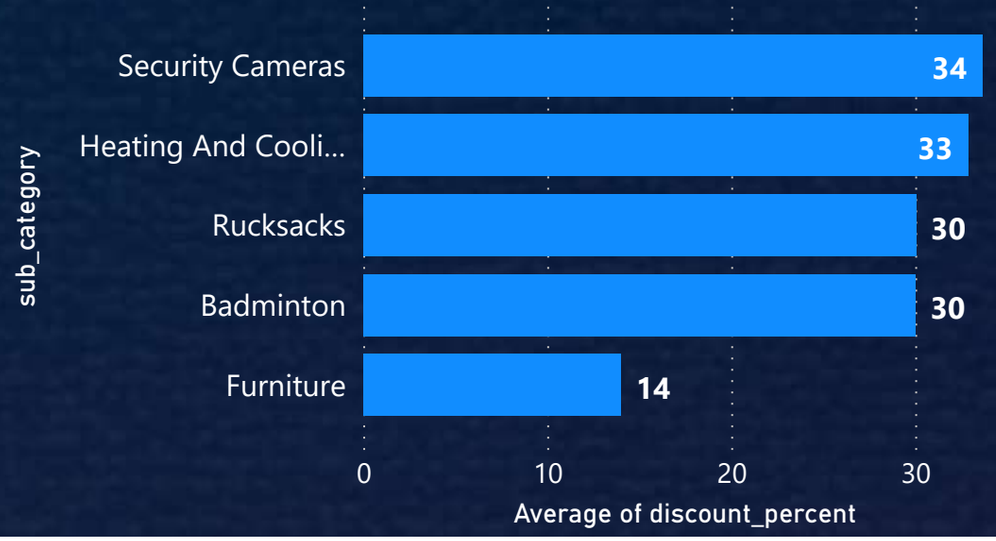


Sub Category VS Average No of Ratings



sub_category	Average of ratings	Average of no_of_ratings	Average of discount_percent
School Bags	4.70	18,690.00	50.00
Car And Bike Care	4.65	11,271.00	56.45
Janitorial And Sanitation Supplies	4.63	37,403.00	32.55
Wallets	4.60	182,473.00	99.90
Musical Instruments And Professional Audio	4.58	14,893.20	26.93
Household Supplies	4.57	14,374.33	17.50
Total	4.17	41,091.23	44.38

Sub Category VS Average Discount Percent



Category

Accessories	Car And Motorbike	Men's Shoes	Stores
Appliances	Grocery And Gourmet Foods	Music	Toys And Baby Products
Bags And Luggage	Home And Kitchen	Pet Supplies	TV, Audio And Cameras
Beauty And Health	Industrial Supplies	Sports And Fitness	

Slider : No of Rating

no_of_ratings

5,000.00 — 589,547.00

Slider : Actual Price

actual_price

15,000.00 — 9,899,999,999.00

Recommended Products

name	ratings	actual_price
Pampers Diapers Size 4, 150 Count - Pampers Pure Protection Disposable Baby Diapers, Hypoallergenic and Unscented Protecti...	4.90	55,200.00
Pampers Swaddlers Disposable Baby Diapers, Newborn/Size (< 10 lb), 140 Count, Enormous Pack, Packaging May Vary	4.90	18,589.00
Elgato Stream Deck XL - Advanced Stream Control with 32 customizable LCD keys, for Windows 10 and macOS 10.13 or later	4.80	35,200.00
Fujifilm Instax Mini Link Smartphone Printer - Dark Denim	4.80	22,842.00
SAMSUNG PRO Plus + Adapter 512GB microSDXC Up to 160MB/s UHS-I, U3, A2, V30, Full HD & 4K UHD (MB-MD512KA/AM)	4.80	22,900.00
Ultimate Ears WONDERBOOM 2 Wireless Outdoor Speaker (Deep Space) Black	4.80	24,451.00
: Roku Ultra 2020 Streaming Media Player HD/4K/HDR/Dolby Vision with Dolby Atmos, Bluetooth, and Roku Voice Remote with He...	4.70	40,100.00
Brooks Ghost 14 Sneakers for Men Offers Soft Fabric Lining, Plush Tongue and Collar, and L Lace-Up Closure Shoes	4.70	25,999.00
Casio Analog Men's Watch (Dial Colored Strap)	4.70	15,999.00
Diapers Size 6, 144 Count - Pampers Baby Dry Disposable Baby Diapers, ONE MONTH SUPPLY	4.70	22,799.00
e Pure 211+ Air Purifier with Particle and Carbon Filter for Allergen and Odor Reduction, Washable Pre-Filter, Large Room...	4.70	88,977.00

Conclusion

1. Consider splitting categories like TV, Audio, Camera, and Accessories to get a more fined grouping of products.

2. Day-to-Day products such as Groceries, beauty items and clothing have affordable prices. also tend to have lower discounts.

3.We can observe a greater number of fashion products and accessories being offered at higher discounts , indicating increased competition on these categories.

Challenges Faced

1. Duplicates across subcategories
2. URL Validation and Web Scraping
3. Data Skewness

Q & A