Consumer Preferences and Market Trends in Flipkart Mobile Sales: A Comprehensive Analysis

PRESENTED BY
RY SELVAGANAPATHY

Flipkart

- Flipkart Private Limited is an Indian e-commerce company, headquartered in Bangalore, and incorporated in Singapore as a private limited company. The company initially focused on online book sales before expanding into other product categories such as consumer electronics, fashion, home essentials, groceries, and lifestyle products.
- The service competes primarily with Amazon India and domestic rival Snapdeal. As of FY23, Flipkart held a 48% market share in the Indian e-commerce industry. Flipkart has a dominant position in the apparel segment, bolstered by its acquisition of Myntra, and was described as being "neck and neck" with Amazon in the sale of electronics and mobile phones.

BUSINESS PROBELEM

- The goal is to solve a hypothetical business challenge for a Flipkart Authorized Seller. The individual wants to sell their mobile phones on Flipkart. For this, the individual seeks the best product, brand, specifications, and deals that will make the most money with the least amount of investment and budget.

Questions to be answered:

1. Should he sell products from a single brand or try to sell models from multiple brands?

2. Using EDA and data visualization, discover insights and relationships between different attributes.

3. Conduct a thorough examination of each brand.

DATA COLLECTION

Data was extracted from the Flipkart website via web scraping. The data was collected on September 14, 2021 and may not reflect the most recent updates. The dataset contains genuine data.

ABOUT DATASET

Flipkart Mobiles Dataset

This dataset containing specs of various Mobile brands in India has been scraped from an ecommerce website 'Flipkart'. This dataset has 3114 samples with 8 attributes. There are some missing values as well.

Description of Attributes

- Brand- Name of the Mobile Manufacturer
- Model- Model number of the Mobile Phone
- Color- Color of the model.
- Memory - RAM of the model (4GB,6GB,8GB, etc.)
- Storage- ROM of the model (32GB,64GB,128GB,256GB, etc.)
- Rating- Rating of the model based on reviews (out of 5). Missing or Null values indicate there are no ratings present for the model.
- Selling Price- Selling Price/Discounted Price of the model in INR when this data was scraped. Ideally price indicates the discounted price of the model
- Original Price- Actual price of the model in INR. Missing values or null values would indicate that the product is being sold at the actual price available in the 'Price' column.

EXPLORATORY DATA ANALYSIS EDA

EDA is one of the most important phases in data science since it helps us to obtain critical insights and statistical metrics. In general, EDA can be categorised in two ways:

1. The first distinction is that each method is either non-graphical or graphical.
2. Second, each method is univariate or multivariate in nature (usually just bivariate).

Non-graphical approaches typically include the computation of summary statistics, but graphical methods clearly summarize the data in a diagrammatic or pictorial manner.

Let's look at each type individually.

INSTANCE OF THE DATASET

	Brand	Model	Color	Memory	Storage	Rating	Selling Price	Original Price	Price_Category
0	OPPO	A53	Moonlight Black	4 GB	64 GB	4.5	11990	15990	10K-30K
1	OPPO	A53	Mint Cream	4 GB	64 GB	4.5	11990	15990	10K-30K
2	OPPO	A53	Moonlight Black	6 GB	128 GB	4.3	13990	17990	10K-30K
3	OPPO	A53	Mint Cream	6 GB	128 GB	4.3	13990	17990	10K-30K
4	OPPO	A53	Electric Black	4 GB	64 GB	4.5	11990	15990	10K-30K
...	...	...	...	...	...	...	...	...	...
3109	SAMSUNG	M52 5G	Blazing Black	6 GB	128 GB	4.3	25990	25990	10K-30K
3110	SAMSUNG	M52 5G	Icy Blue	6 GB	128 GB	4.3	25489	28449	10K-30K
3111	SAMSUNG	M52 5G	Icy Blue	8 GB	128 GB	4.3	27239	31489	10K-30K
3112	SAMSUNG	M52 5G	Slate Black	8 GB	128 GB	4.2	22989	22989	10K-30K
3113	SAMSUNG	M52 5G	Sky Blue	8 GB	128 GB	4.2	20350	22595	10K-30K

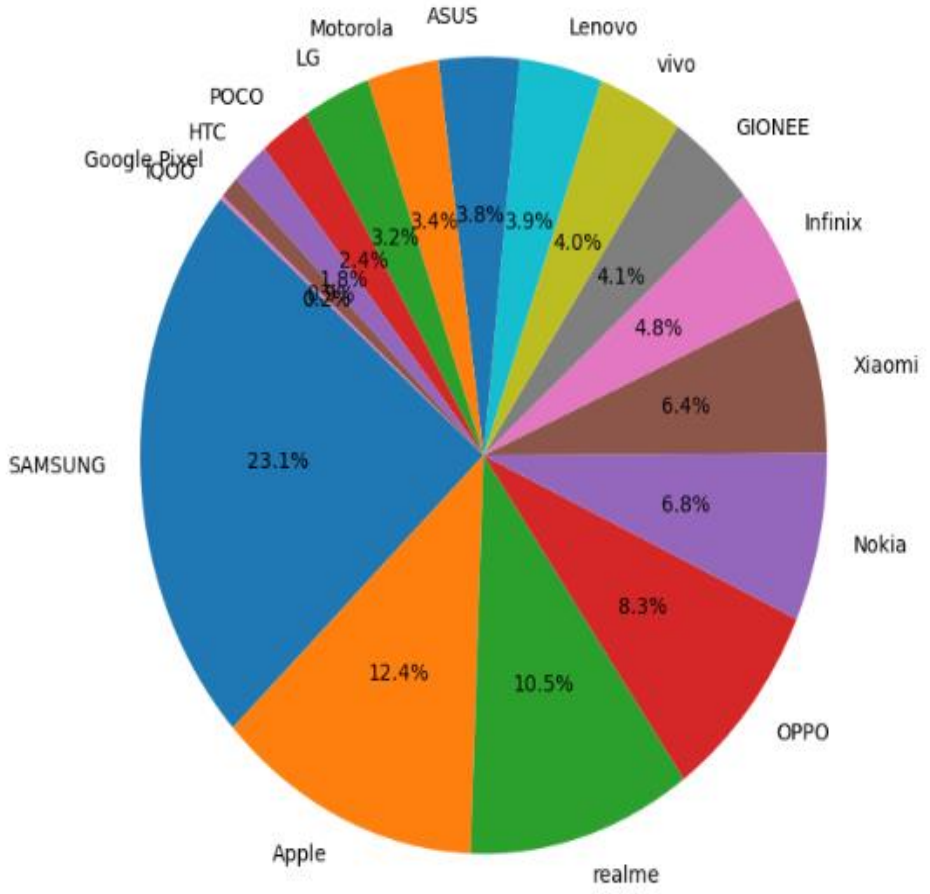
DESCRIPTIVE STATISTICS (NON-GRAPHICAL)

In this section, we will look at the Measures of Central Tendency (Mean, Median, Mode) and Measures of Dispersion (Standard Deviation, Range and Quartiles).

Numerical Features

	count	mean	std	min	25%	50%	75%	max
Rating	2970.0	4.243098	0.271991	2.3	4.10	4.3	4.4	5.0
Selling Price	3114.0	26436.625562	30066.892622	1000.0	9990.00	15000.0	28999.0	179900.0
Original Price	3114.0	28333.473025	31525.599889	1000.0	10030.25	16889.5	31500.0	189999.0

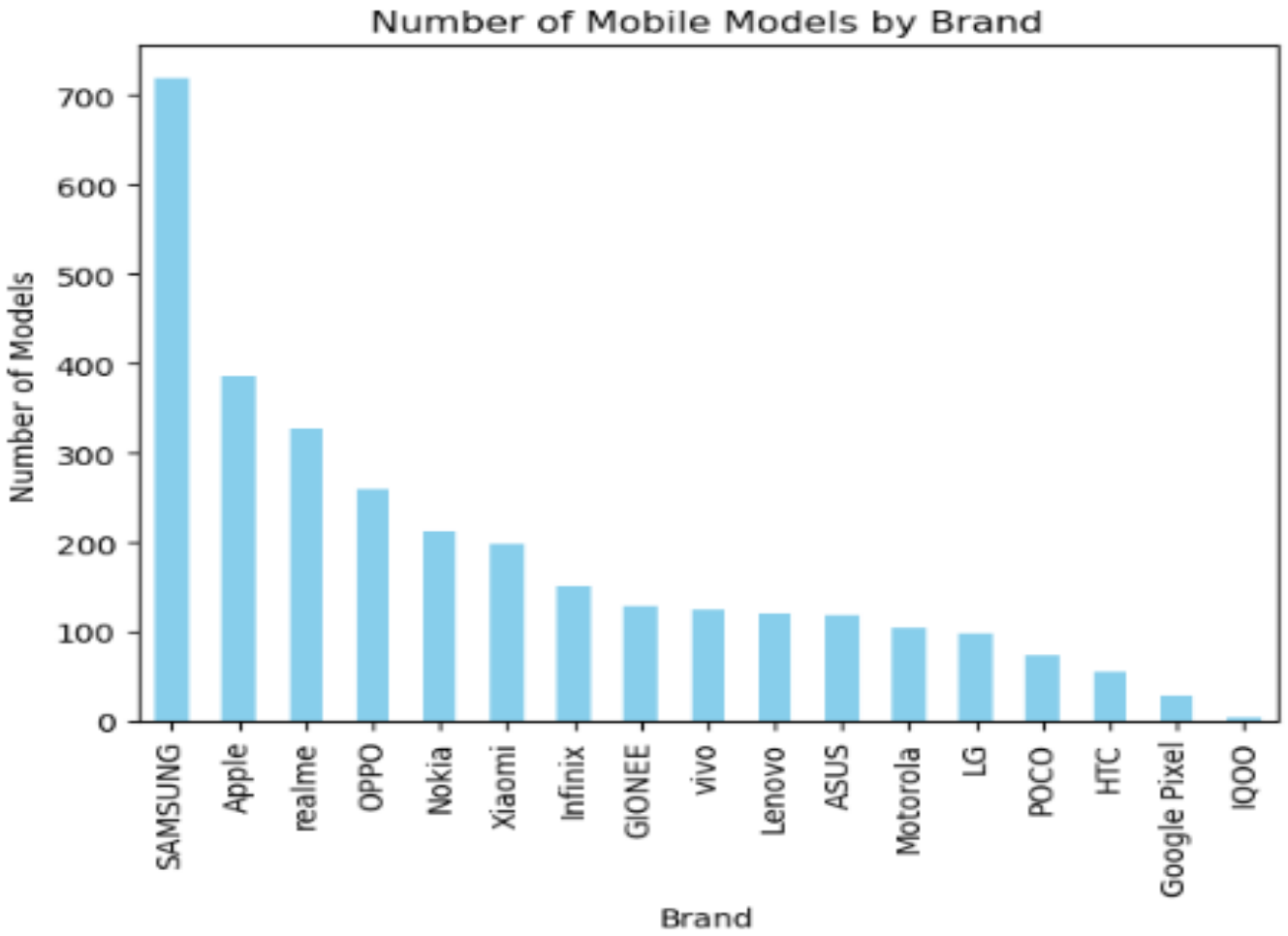
BRAND-WISE RELEASED MODEL COUNT



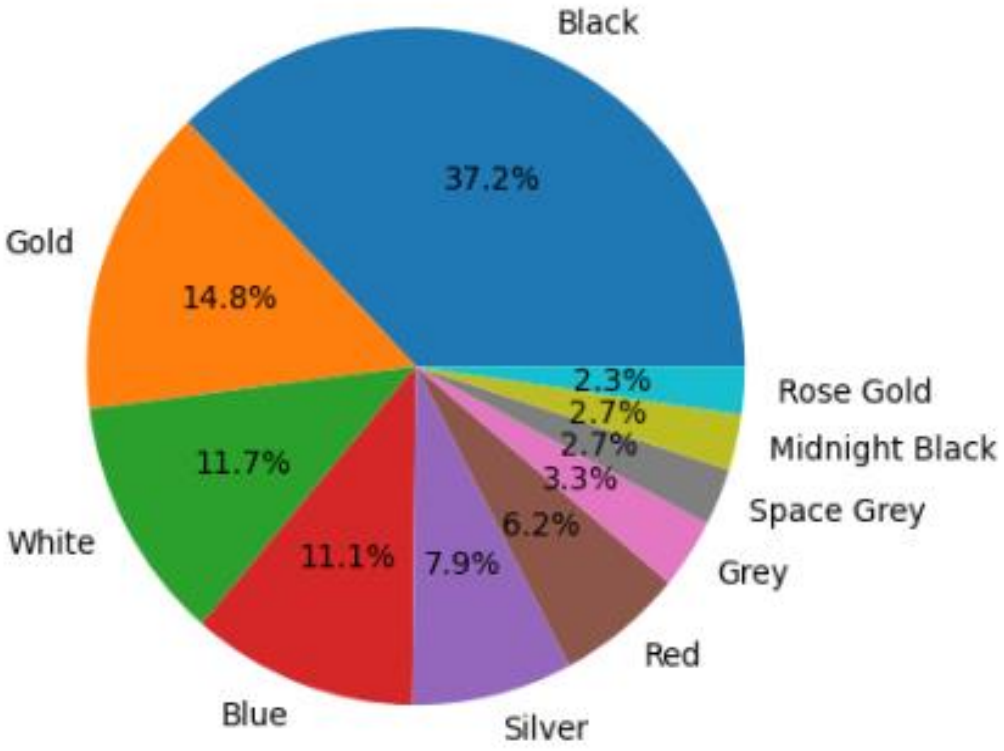
Brand	
SAMSUNG	719
Apple	387
realme	327
OPPO	260
Nokia	213
Xiaomi	198
Infinix	151
GIONEE	129
vivo	124
Lenovo	121
ASUS	118
Motorola	105
LG	99
POCO	74
HTC	55
Google Pixel	29
IQOO	5

It appears that Samsung has released the highest number of phones on Flipkart, while iQOO has a lower count. Samsung's extensive lineup includes various models catering to different price points and user preferences. On the other hand, iQOO, known for its performance-oriented devices, focuses on a more selective range of smartphones

NUMBER OF MOBILE MODELS BY BRAND

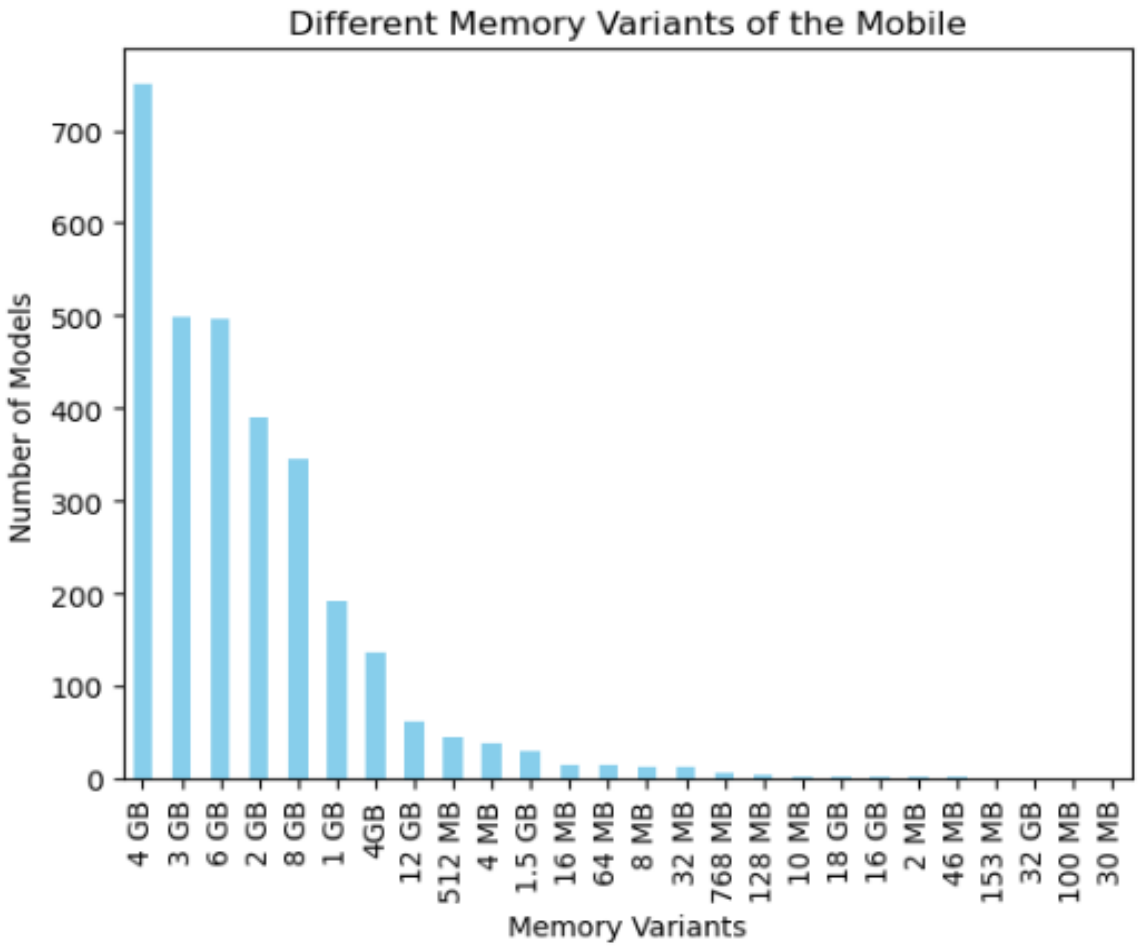


COLOUR-WISE PRODUCT COUNT



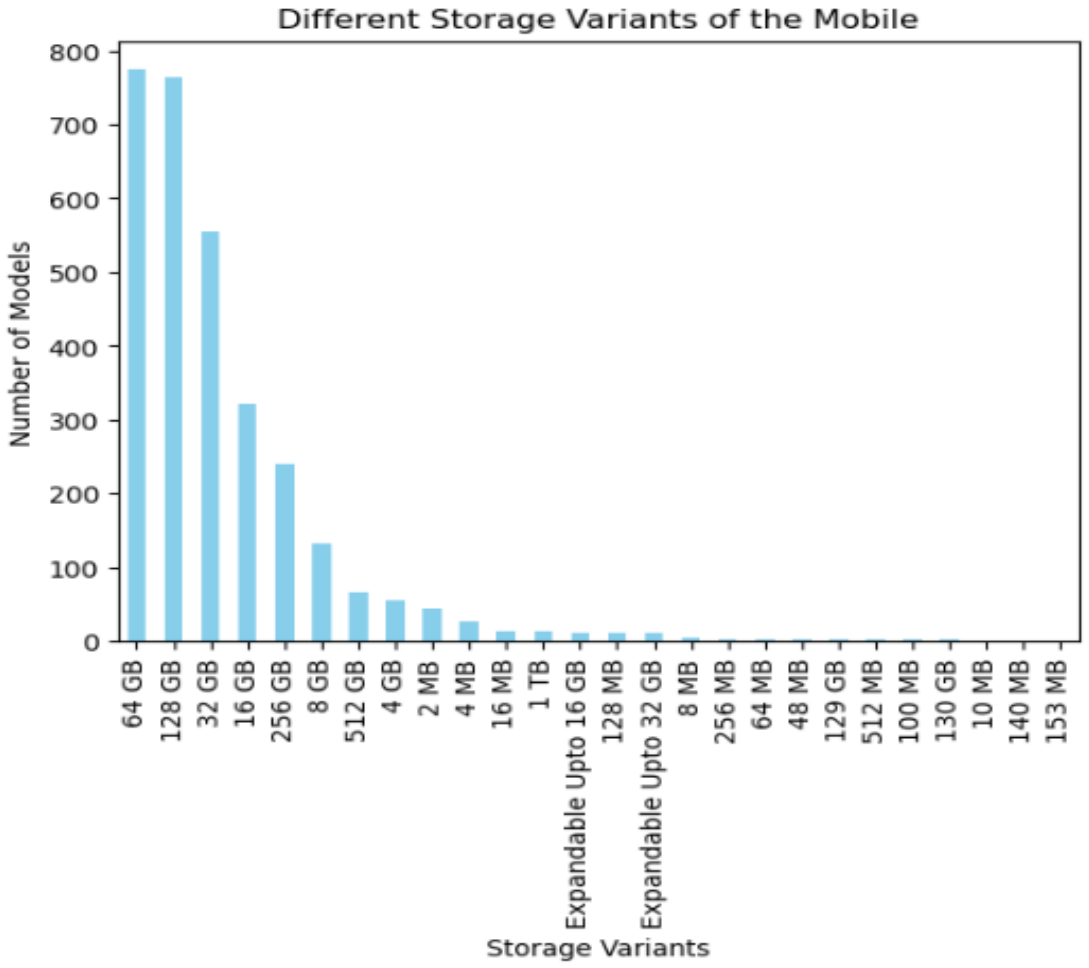
- The higher popularity of black mobiles could be due to their classic and versatile appeal, perceived elegance, and neutrality, making them suitable for a wide range of users and environments.
- The gold color is also popular because it often conveys a sense of luxury and premium quality. Gold-colored mobiles can be perceived as more stylish and upscale, attracting customers who prefer a more glamorous look.
- On the other hand, rose gold might be less popular because it is seen as more trendy and less universally appealing, potentially targeting a more niche market.

MEMORY-WISE PRODUCT COUNT



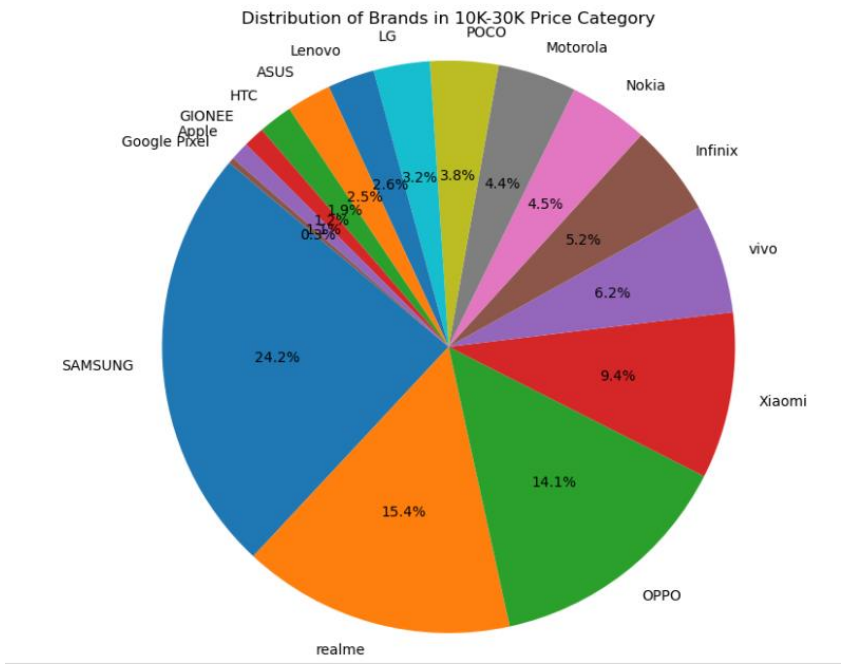
- The higher model count for 4GB variants is likely due to it being a balanced option, offering sufficient performance for most users without being too expensive. It hits a sweet spot between affordability and functionality, making it a popular choice for both manufacturers and consumers.
- On the other hand, 100MB and 32GB variants have lower model counts because they are either outdated (100MB) or impractical for modern usage (32GB), leading to less demand and fewer models being produced in these capacities.

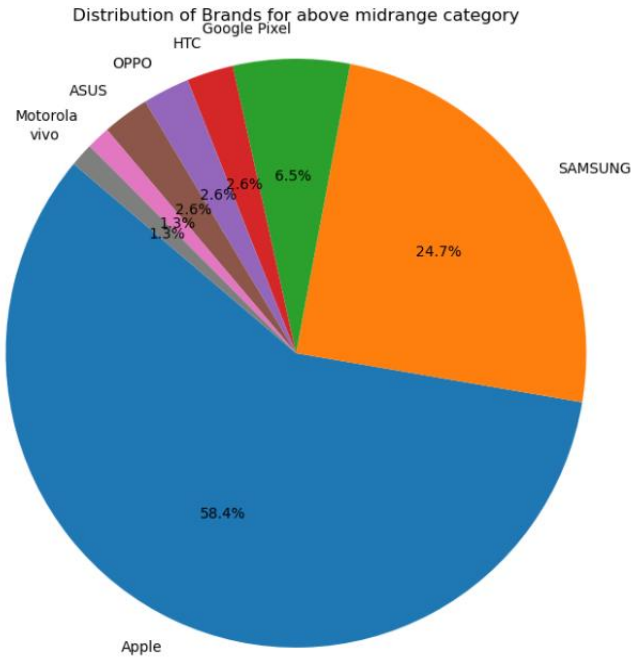
STORAGE-WISE PRODUCT COUNT

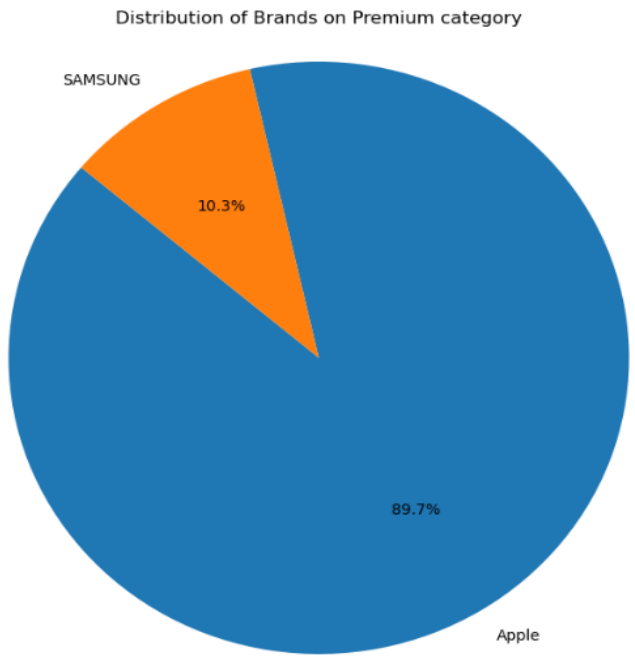


- 64GB and 128GB storage options are common because they provide ample space for apps and media, offer good value for money, and meet future storage needs. They balance cost and functionality, making them popular among consumers.
- Conversely, 153MB, 140MB, and 512MB are outdated and insufficient for modern usage, leading to low demand and limited production.

PRICE CATEGORY WISE BRAND DISTRIBUTIONS

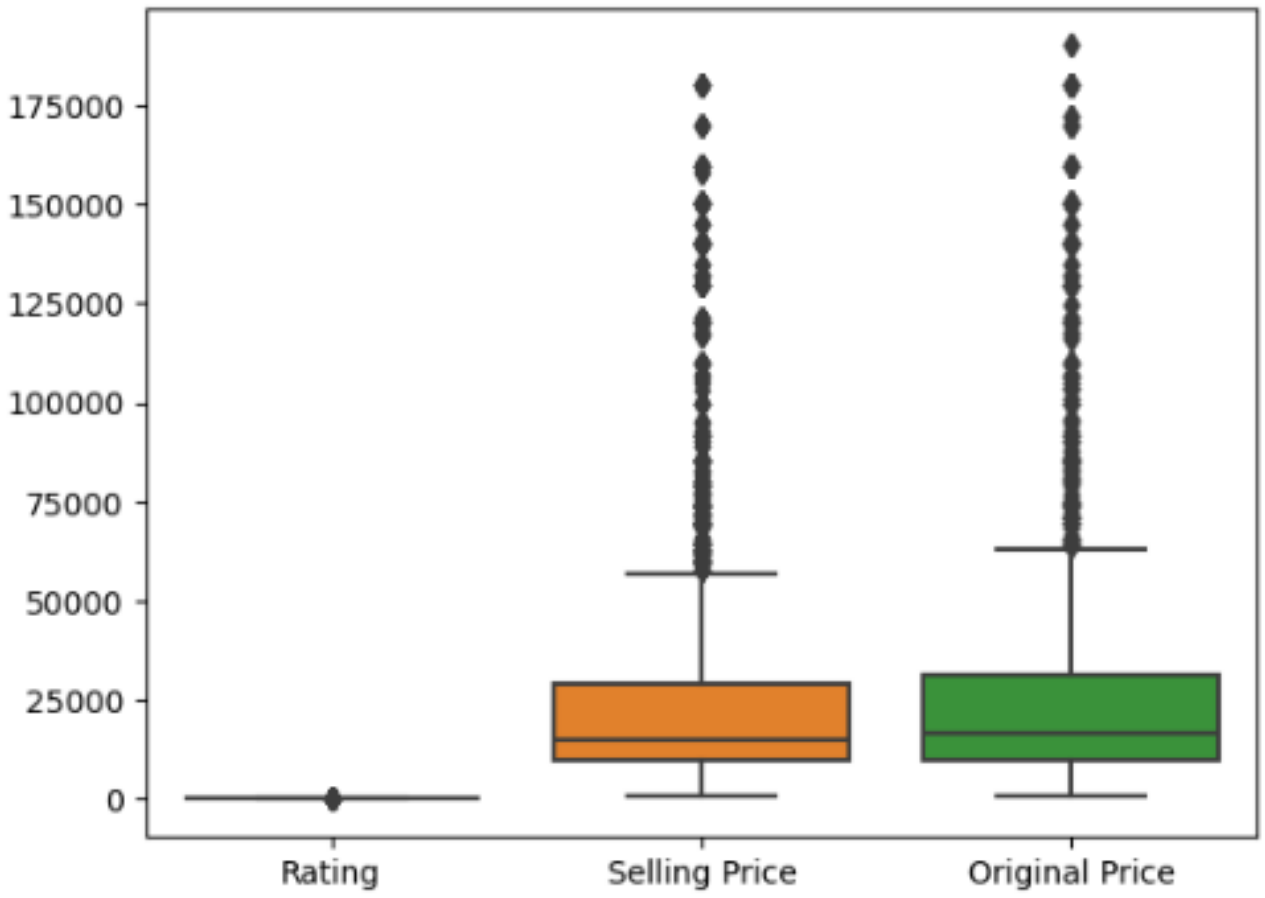






- As we can see that, samsung releases more affordable mobile models to indian flipkart market. Where as google pixel and apple has a least or no mobile models released in this price category.
- In this Plot, we can see that apple dominates the market in this price category. Where as samsung is the second highest brand in this category.
- In this Price category, apple and samsung dominates the whole market. And Apple has more no. Of models released in this category.

Selling price vs orginal(MRP) Price



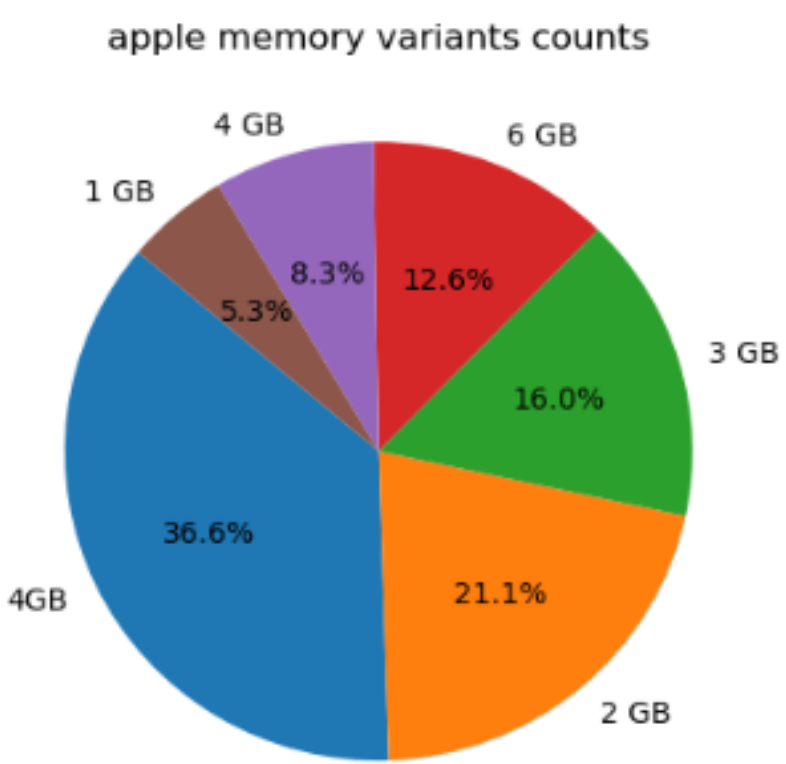
- Selling prices are generally lower than original prices. It may be due to recent big-billion days. Or Offers.

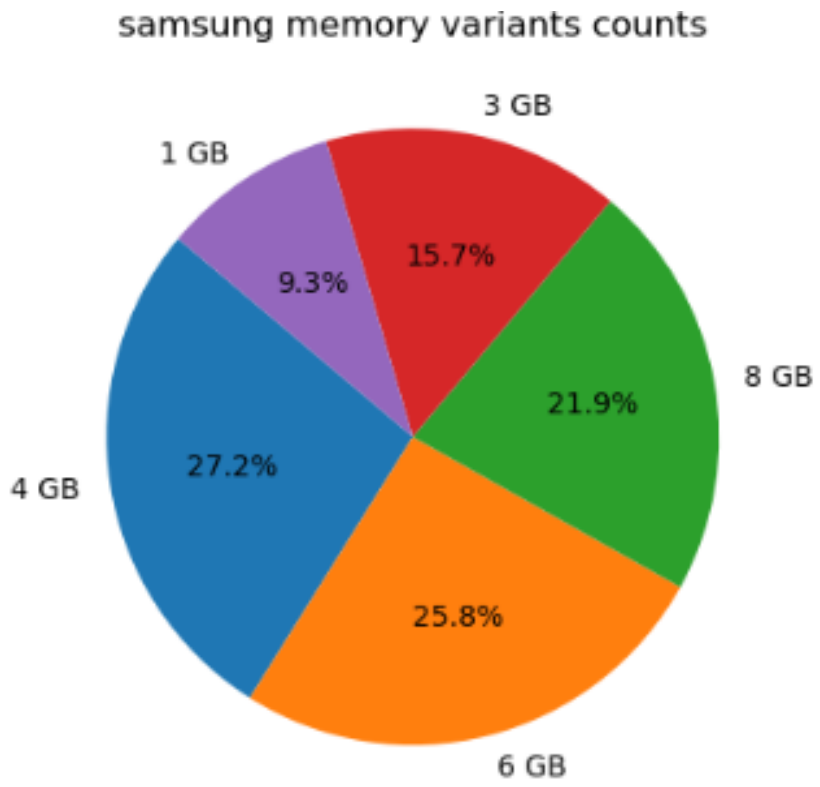
- So thus this is the right time to buy the mobile phones

- Both selling and original prices have significant high-value outliers.

Apple vs Samsung

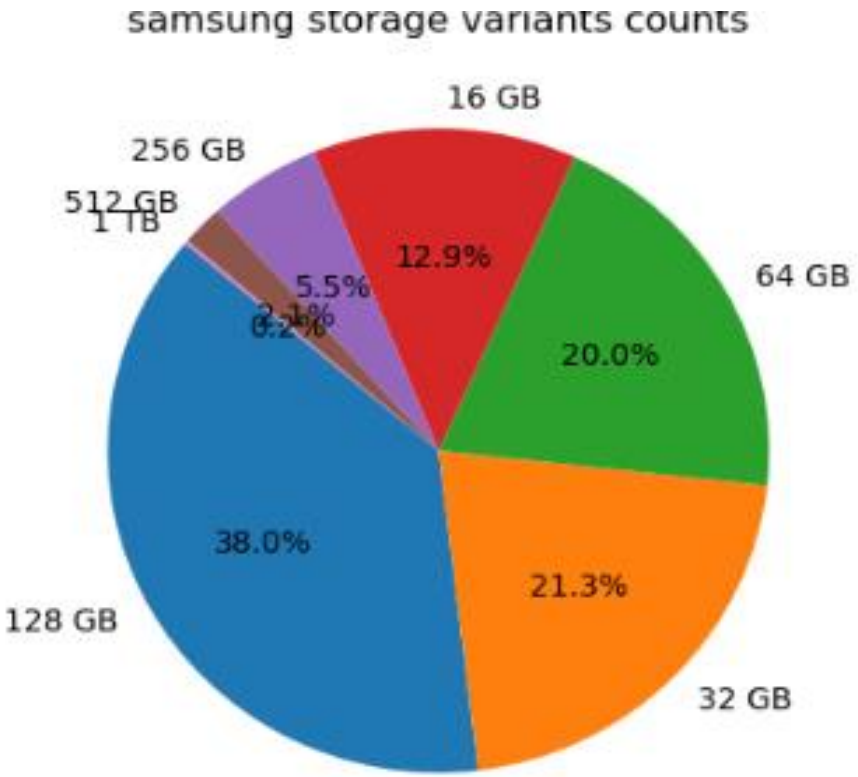
(Based on memory)

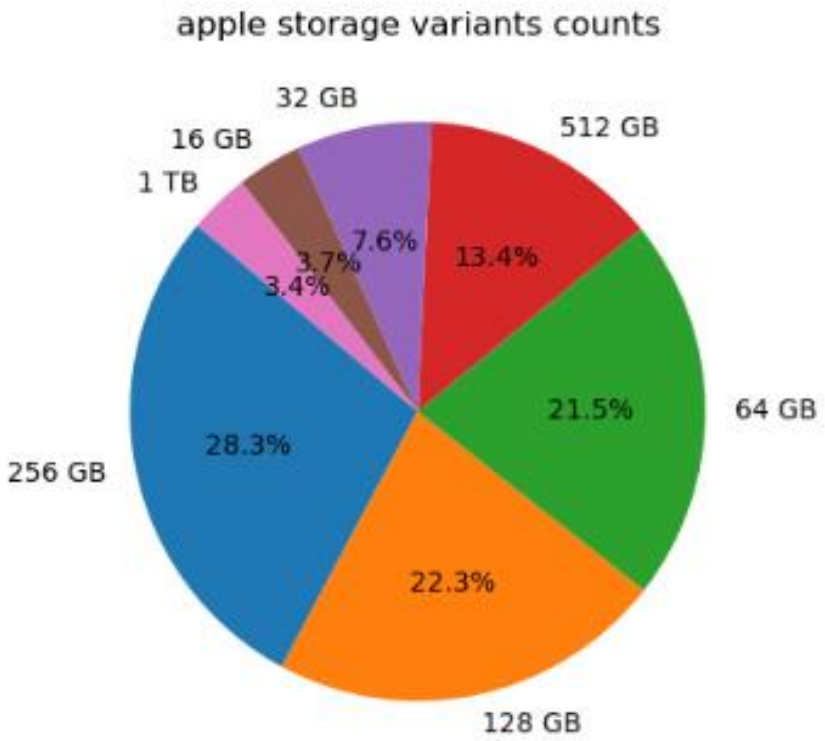




Both brands have a diverse range of memory variants, with 4 GB being the most common for both Apple and Samsung. Apple has a significant presence of 2 GB and 3 GB variants, while Samsung has notable 6 GB and 8 GB variants.

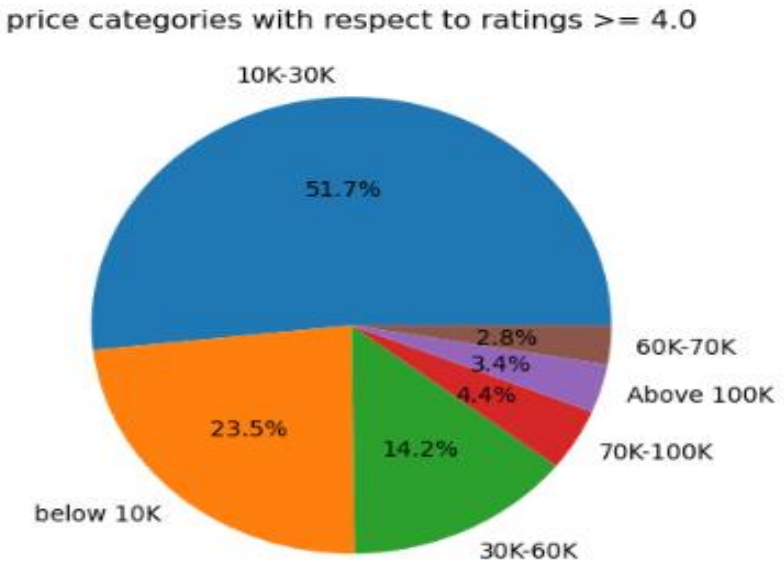
Apple vs Samsung
(Based on Storage variants)





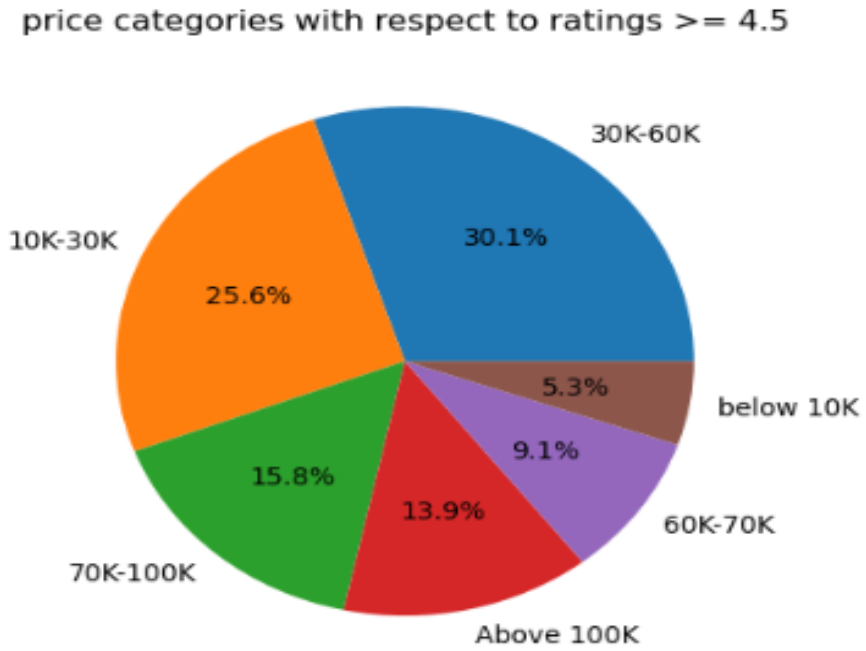
Both brands offer a range of storage variants, with mid-range capacities (128 GB and 256 GB) being the most common. Apple has a more even distribution across higher storage options compared to Samsung.

Are higher rated mobiles always premium or expensive?



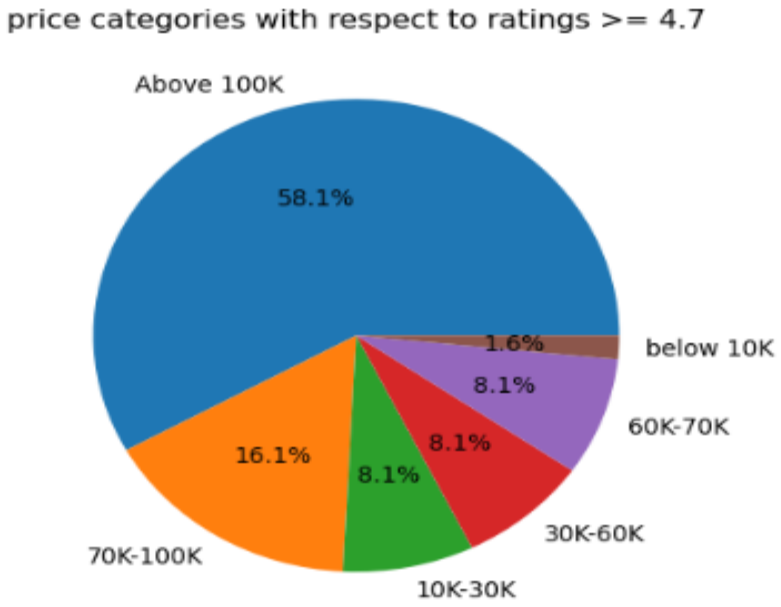
Ratings >= 4.0:

- The largest category is 10K-30K, making up 51.7%.
- Below 10K also has a significant share at 25.5%.
- 30K-60K accounts for 14.2%.
- Higher price categories (60K-70K, 70K-100K, and Above 100K) have smaller shares.



Ratings >= 4.5:

- The largest category is 10K-30K, making up 30.1%.
- 30K-60K and Below 10K are also significant, with 25.6% and 15.8% respectively.
- 70K-100K and Above 100K have smaller shares.
- 60K-70K accounts for the least share at 9.1%.



Ratings >= 4.7:

- The largest category is 10K-30K, making up 58.1%.
- Below 10K is significant at 16.1%.
- 30K-60K accounts for 16.1%.
- Higher price categories (60K-70K, 70K-100K, and Above 100K) have much smaller shares.

Higher-rated mobiles are not always premium or expensive. The analysis of the pie charts indicates:

- The majority of highly-rated mobiles fall within the 10K-30K price range.
- There is a substantial share of highly-rated mobiles priced below 10K.
- Higher-priced categories (above 60K) have a much smaller presence among highly-rated devices.

Conclusion:

Highly-rated mobiles are often found in more affordable price ranges rather than being exclusively premium or expensive.

Does a brand have better than 4 ratings for many of its products?

	Brand	Total Models released	Models with Rating > 4.0
0	ASUS	118	60
1	Apple	387	334
2	GIONEE	129	32
3	Google Pixel	29	29
4	HTC	55	16
5	IQOO	5	5
6	Infinix	151	146
7	LG	99	36
8	Lenovo	121	52
9	Motorola	105	83
10	Nokia	213	83
11	OPPO	260	233
12	POCO	74	73
13	SAMSUNG	719	572
14	Xiaomi	198	188
15	realme	327	309
16	vivo	124	113

- The table shows that many brands have a significant proportion of models with ratings above 4.0. Brands like Apple, Samsung, and realme have a high number of highly-rated models. Realme has an especially high proportion of its models rated above 4.0. Overall, most brands have a substantial percentage of their models achieving high ratings.

- We can also notice that Google pixel released models has all its product rating greater than 4.0, its due to their products relaibility and accomodating latest trends.

Does a brand have better than 4 ratings for all its products?

	Brand	Total Models released	Models with Rating > 4.0
0	ASUS	118	60
1	Apple	387	334
2	GIONEE	129	32
3	Google Pixel	29	29
4	HTC	55	16
5	IQOO	5	5
6	Infinix	151	146
7	LG	99	36
8	Lenovo	121	52
9	Motorola	105	83
10	Nokia	213	83
11	OPPO	260	233
12	POCO	74	73
13	SAMSUNG	719	572
14	Xiaomi	198	188
15	realme	327	309
16	vivo	124	113

As from this table, we can see that IQOO and Google Pixel has just released very less number of models but has got rating of 4.0 in its every released model.

So with this trends, we can say

"It is not about Quantity, Its about quality"

CONCLUSION

- The Flipkart mobile data analysis reveals key insights into consumer preferences and market trends. Black and gold are the most popular mobile colors, likely due to their universal appeal and sleek aesthetics, while less common colors like rose gold, midnight black, and gray see lower demand. In terms of storage, 4 GB RAM is favored for balancing cost and performance, and storage capacities of 64 GB and 128 GB are widely used for their practicality. Very low storage capacities, such as 140 MB, are outdated and less preferred.
- Mid-range mobiles (10K-30K) dominate the market across various brands, indicating a strong consumer preference for affordable yet capable devices. This is further supported by the observation that highly-rated mobiles are often found in this price range, challenging the notion that only premium-priced models receive high ratings. Both Samsung and Apple offer diverse memory and storage options, with mid-range capacities being the most common.
- Brands like Apple, Samsung, and realme stand out with a high proportion of their models achieving ratings above 4.0, highlighting their focus on quality and customer satisfaction. Overall, the data suggests that consumers prioritize a balance of affordability, performance, and sufficient memory/storage in their mobile purchasing decisions, with high ratings achievable across a wide range of price points.